



ACQUISITION RESEARCH PROGRAM SPONSORED REPORT SERIES

Innovative Defense Acquisition Concept Deployer Equipment Bundle (DEB)

June 2017

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ABSTRACT

The military spends resources ensuring individual warfighter equipment is technologically advanced and operationally effective/suitable. Certain types of warfighter equipment, specifically durable goods, have long service lives; therefore, services cannot afford to replace all warfighter equipment when advances in capability or weight reduction are achieved. However, like pre-positioned stocks of heavy combat equipment, having stocks of modern warfighter equipment in a non-contingent environment ready for early deployers ensures readiness and buys time for industrial base ramp-up.

The Deployer Equipment Bundle (DEB) concept would outfit early deploying brigade combat teams (BCTs) to the next major contingency with the most modern, lifesaving equipment available, providing sufficient buffer stock to enable the industrial base to ramp up to full capacity. This concept procures organizational clothing and individual protective equipment (OCIE) and personal protective equipment (PPE) for immediate capability needs and includes flame-resistant (FR) uniforms. The DEB concept increases flexibility while reducing operational risks to the Army. We found that an effective implementation of a DEB concept should leverage the best practices of the Army Rapid Field Initiative (RFI) operations, Army Pre-positioned Stocks (APS) operations, and United States Marine Corps Individual Clothing and Combat Equipment (ICCE) operations. In addition, our research identified the barriers and challenges to the acceptance of the DEB concept: aversion to change, ignorance to new concepts, Army culture, and trust.



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ABOUT THE AUTHORS

Lieutenant Commander Frederic Albesa was born in Avignon, France. He graduated from University of Lausanne, Switzerland (HEC) in 1998 with a Bachelor in Economics. This work was completed as a partial requirement of earning a Master of Business Administration degree in Acquisition and Contract Management at Naval Postgraduate School in Monterey, California.

Lieutenant Commander Frederic Albesa was commissioned in the United States Navy as a Supply Corps Officer in March 2006 via the Officer Candidate School program and reported for duty onboard USS BARRY (DDG 52) in Norfolk, Virginia, as the Disbursing and Sales Officer. In this assignment, he helped the Supply Department through a satisfactory INSURV inspection, JOINT WARRIOR exercise, NATO deployment and Supply Management Certification. Albesa's second assignment was to Naval Station Diego Garcia, as Assistant Supply Officer. He supported the logistics for the repair and maintenance of transiting submarines and quality of life of more than 3,000 island residents. Albesa then reported to DLA Distribution Yokosuka, Japan and acted as the Material Processing Center officer in charge and Emergency Supply Operations Center Director to support all forward deployed naval forces stationed in Japan. From Yokosuka, Japan, he supported the immediate relief efforts in support of OPERATION TOMODACHI. Then, he returned to sea as a Department Head onboard the cruiser USS CHANCELLORSVILLE (CG 62). From San Diego, CA, he was homeported on one of the most advanced Cruiser ever designed back to Yokosuka, Japan and supported the logistics for a demanding missile testing phase resulting in first ever NIFCA combat system certification. He then reported to Naval Postgraduate School.

Albesa earned the Supply Warfare Supply Corps Officer pin. His personal awards include the Joint Service Commendation Medal, Joint Service Achievement Medal, Navy and Marine Corps Commendation Medal, and Navy and Marine Corps Achievement Medal in addition to other unit awards.



Captain Stephen F. Kirouac, a native of Orlando Florida, enlisted in the Army in July of 1992 and went to basic training at Fort Jackson, SC. Upon completion of basic, Stephen stayed at Fort Jackson to attend advanced individual training as an Administrative Clerk Typist. Upon completion of his training, Stephen left for Fort Benning to attend the United States Army Airborne School. Upon graduation from Airborne School, Stephen PCS'ed to Fort Bragg, NC to work in the Battalion administrative office for 3rd Battalion, 319th Airborne Field Artillery Regiment. In April of 1996, Stephen exited the Army to pursue a career in commercial diving and non-destructive testing. In February of 2001, Stephen reenlisted back into the Army in New Orleans, LA and was transferred to Hunter Army Airfield where he was assigned to the Headquarters and Headquarters Aviation Brigade as a BDE S1 assistant NCO. In October of 2002, Stephen deployed to Kuwait/Iraq on a nine month deployment in support of Operation Iraqi Freedom. In January of 2004, Stephen PCS'ed to Camp Casey, Korea where he worked in the DISCOM Brigade S1 office as a Brigade S1 NCO. In 2005, Stephen PCS'ed to Fort Jackson, SC where he was assigned to the 2-39 Infantry Battalion as a Battalion S1 assistant NCO. In September of 2005, Stephen ETS'ed and enlisted into the Florida National Guard where he was assigned to the 3rd Battalion, 20th Special Forces Group as a Battalion S1 NCO. In January of 2006, Stephen began his collegiate career at the University of Central Florida (UCF) and entered the UCF ROTC. In August of 2009, Stephen graduated from UCF with a bachelor's degree in Business Administration and a minor in Military Science and subsequently commissioned onto active duty as a 2LT into the Transportation Corps. Additionally in September 2009, Stephen attended BOLC II at Fort Sill, OK and in November of 2009, Stephen attended Transportation School at Fort Eustis, VA. In April of 2010, Stephen PCS'ed to Schofield Barracks, HI where he was assigned to the 325th BSB as the Maintenance Control Officer, Distribution Platoon leader, and Battalion S4. In March of 2011, Stephen deployed to RC East Afghanistan on a 12 month deployment in support of Operation Enduring Freedom. In March of 2013, Stephen PCS'ed to Fort Lee, VA where he attended the logistics captain career course. In September of 2013, Stephen PCS'ed to Fort Bragg, NC where he was assigned to the 782nd Brigade Support Battalion. While serving in the 782nd BSB, Stephen served as the 782nd Alpha Company Commander and the 188th BSB Enduring Equipment Company Commander until the 4th BDE, 82nd Airborne Divisions inactivation. In July of



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Lieutenant Commander Isaac J. Ortman was born in Winston-Salem, NC. He graduated from Appalachian State University in 2002 with a Bachelor of Arts degree in Psychology. This work was completed as a partial requirement of earning a Master of Business Administration degree in Acquisition and Contract Management at Naval Postgraduate School in Monterey, California.

Ortman was commissioned in the United States Navy as a Supply Corps Officer in January 2006 via the Officer Candidate School program and reported for duty onboard USS GUARDIAN (MCM 5) in Sasebo, Japan, as the Supply Officer. In this assignment, he led the Supply Department through two consecutive Blue "E" award Supply Management Certifications, a satisfactory Board of Inspection and Survey, as well as numerous Seventh Fleet theater engagements. Ortman's second assignment was to Naval Sea Systems Command Headquarters in Washington, DC, as an Integrated Logistics Specialist intern. He served as the In-Service Aircraft Carrier Obsolescence Program Manager, Readiness Manager for Surface Ship obsolescence and as a dedicated lead for the Policy Systems Engineer on an Integrated Product Team for Mine Counter Measures diesel engine maintenance. Ortman then deployed for 10-months on Individual Augmentation as the Chief Operations Officer of Defense Contract Management Agency – Afghanistan Headquarters in Kabul, Afghanistan. He returned to sea onboard USS DWIGHT D. EISENHOWER (CVN 69), first as the Hotel Services Officer and then as the Stock Control Officer. Ortman made one Fifth Fleet deployment and saw IKE through her final Deep Planned Incremental Availability. He then reported to Naval Postgraduate School



Ortman earned supply warfare qualifications in aviation and surface warfare. His personal awards include the Joint Service Commendation Medal, three Navy and Marine Corps Commendation Medals and the Navy and Marine Corps Achievement Medal, in addition to other unit awards. He is married to the former Anne Elaine Shoemaker, of Dubuque, Iowa. They have three children; Eleanore, Lillian and Samuel.



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This MBA professional report is dedicated to my favorite shipmate and wife, Amphay, and our children, Milo and Valentin. Thank you for all your love, support, and patience during these past 18 months.

—Fred Albesa

In life, events experienced shape who we are, and who we are to become. I once remember being asked, “What do you want to accomplish by the time you are 40?” My response, “earn an MBA.” Although two years late, it looks as though I will finally accomplish that goal.

Here at the Naval Postgraduate School, the friends made and the knowledge gained will forever leave a mark on my life. I firmly believe nothing in life ever worth doing comes easy, and earning my master’s in business administration was without a doubt one the most challenging yet rewarding task I have experienced thus far in my military career. I would like to acknowledge that, if not for the support of my wife, Madelene, and son, Yadin, success at this endeavor may not have been possible. I love you both immensely.

- —Stephen F. Kirouac

I dedicate this project to the First Deployers. As the “tip of the spear,” this work is for them. Thank you to Dr. Douglas Brinkley, Dr. Robert Mortlock, and Dr. Amilcar Menichini for the outstanding support and academic insights. Lastly, thank you to my wife, Anne, and our three children, Eleanore, Lillian, and Samuel. I love you for all time.

- —Isaac J. Ortman



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Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.



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LIST OF ACRONYMS AND ABBREVIATIONS

ABS	Automated Battle Book System
AMC	Army Materiel Command
AMCS	Army Military Clothing Stores
AO	Acquisition Objective
APS	Army Pre-positioned Stocks
AR	Army Regulation
ARCIC	Army Capabilities Integration Center
ASA (ALT)	Assistant Secretary of the Army (Acquisition, Logistics, & Technology)
ASC	Army Sustainment Command
AVC	Asset Visibility Capability
BCT	Brigade Combat Team
CBA	Cost Benefit Analysis
CBRNE	Chemical, Biological, Radiological, Nuclear, and Enhanced Conventional Weapons
CCE	Critical Combat Equipment
CIF	Central Issuing Facility
CL II	Organizational Clothing and Individual Equipment
Class VII	Vehicles and major end items
CMO	Central Management Office
CONOPS	Concept of Operations
CONUS	Continental United States
COSCOM	Corps Support Command
COTS	Commercial-off-the-shelf
CPR	Capabilities Portfolio Review
CSA	Chief of Staff of the Army
CSP	Consolidated Storage Program
CTA	Command Table of Allowance
DAMO-CI	Department of the Army Military Operations–Capabilities Integration, Prioritization, and Analysis Division



DEB	Deployer Equipment Bundle
DEMIL	Defense Demilitarization
DLA	Defense Logistics Agency
DOA	Department of the Army
DOD	Department of Defense
DOTmLPF	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities
EE PEG	Equipping Program Evaluation Group
FR	Fire Retardant
FR ACU	Flame Retardant Army Combat Uniform
G-3/5/7	Army Operations
G-4	Army Logistics
G-8	Army Procurement & Resources (USA, Deputy Chief of Staff)
GRF	Global Response Force, 82 nd Airborne
HQDA	Headquarters, Department of the Army
ICE	Individual Combat Equipment
ICCE	Individual Critical Combat Equipment
IIF	Individual Issue Facility
IOTV	Improved Outer Tactical Vest
LSMC	Logistics Service Management Center
LSS	Lean Six Sigma
MAGTF	Marine Air Ground Task Force
MARCOM	Marine Corps Command
MARCORLOGCOM	Marine Corps Logistics Command
MCO	Marine Corps Order
MCoE	Maneuver Center of Excellence
MFP	Master Fielding Plan
MPF	Maritime Prepositioning Force
MSC	Military Sealift Command



NALMEB	Norway Air-Landed Marine Expeditionary Brigade
NAP	Non-Authorized for Pre-Positioning
OCIE	Organizational Clothing and Individual Equipment
OCO	Overseas Contingency Operation
OCP	Operational Camouflage Pattern
OMA	Operations and Maintenance Army
OPR	Office of Primary Responsibility
PEO	Program Executive Office
PM SPIE	Program Manager Soldier Protection and Individual Equipment
PO	Procurement Order
POM	Program Objective Memorandum
PPE	Personal Protective Equipment
RFI	Rapid Fielding Initiative
SDDC	Surface Deployment Distribution Command
SOP	Standard Operating Procedure
SPS	Soldier Protection System
SSA	Supply Support Activity
SWOT	Strength, Weakness, Opportunity, & Threat
TAACOM	Theater Army Area Command
TACOM	Tank and Automotive Command
TAT	Materiel to Accompany Troop
TAV	Total Asset Visibility
TLCM	Total Life-Cycle Management
UFR	Unfunded Requirement
UIF	Unit Issue Facility
USA	United States Army
USMC	United States Marine Corps



USN	United States Navy
USTRANSCOM	US Transportation Command
VCSA	Vice Chief of Staff of the Army



I. INTRODUCTION

On December 8, 2004, while attending a town hall meeting with Soldiers at Camp Buehring, Kuwait, Secretary of Defense Donald Rumsfeld was asked a question regarding the lack of up-armor on military vehicles. He responded, “As you know, you go to war with the Army you have. They’re not the Army you might want or wish to have at a later time” (Kristol, 2004, Introduction). Rumsfeld’s statement prompted senior leaders to look inward and determine what steps were required to rectify Army materiel capability gaps such as up-armor and antiquated critical combat equipment (CCE).

The United States Army (USA) spends a substantial amount of resources ensuring that individual warfighting equipment is technologically advanced and rigorously tested for combat effectiveness and suitability. Warfighter critical combat equipment has an extended life cycle, meaning it lasts a long time. The managerial decisions regarding procurement, issuing, and sustainment create long-lasting retained effects on readiness. The Army cannot afford to replace all warfighter equipment when advances in capability or weight reduction are achieved. As with pre-positioned stock of heavy combat equipment, providing stocks of modern warfighter equipment Class II (CLII), ready for issue to early deployers will save money, ensure readiness, and buy time for a ramp-up of the industrial base to provide for follow-on forces. This is all in keeping with General Mark A. Milley’s number one priority: “READINESS!” (Milley, 2015, p. 1).

A. BACKGROUND

The Maneuver Center of Excellence (MCoE) recognized the need for an agile deployment equipping process that will keep the industrial base active to ensure that rapidly deploying troops receive the required combat equipment. The MCoE recommends that headquarters, department of the Army (HQDA G3/5/7), endorse the Deployer Equipment Bundle (DEB) concept in order to allow Program Executive Office (PEO) Soldier to procure and manage the necessary items (Sando, 2012). Edgewood Chemical Biological Center conducted a cost benefit analysis (CBA) in 2013 in support of this project. The DEB concept maintains a warm industrial base and significantly



reduces operational risk associated with either a surge or sustaining base (see Figure 1). The DEB concept is not currently adopted by necessary stakeholders.

As displayed in Figure 1, under a warm industrial base designated with a blue line, the DEB concept is capable of fielding 15 brigade combat teams (BCT)s sooner than a surge or sustainment base fielding within the first two months due to proactive storage aspect. Under a surge industrial base, designated with a red line, with fire retardant (FR) uniforms in production, it would take an additional five months after declaration for industry to ramp-up production and 12 months before they were capable of fielding a total of 15 BCTs. Under a cold industrial base, designated with a yellow line, without FR uniforms in production, it would take an additional eight months after declaration for industry to commence production and 15 months before they were capable of fielding a total of 15 BCTs. As demonstrated in the shaded area of Figure 1, operational risk is significantly mitigated with a DEB concept, allowing faster fielding and a faster industrial base ramp-up.

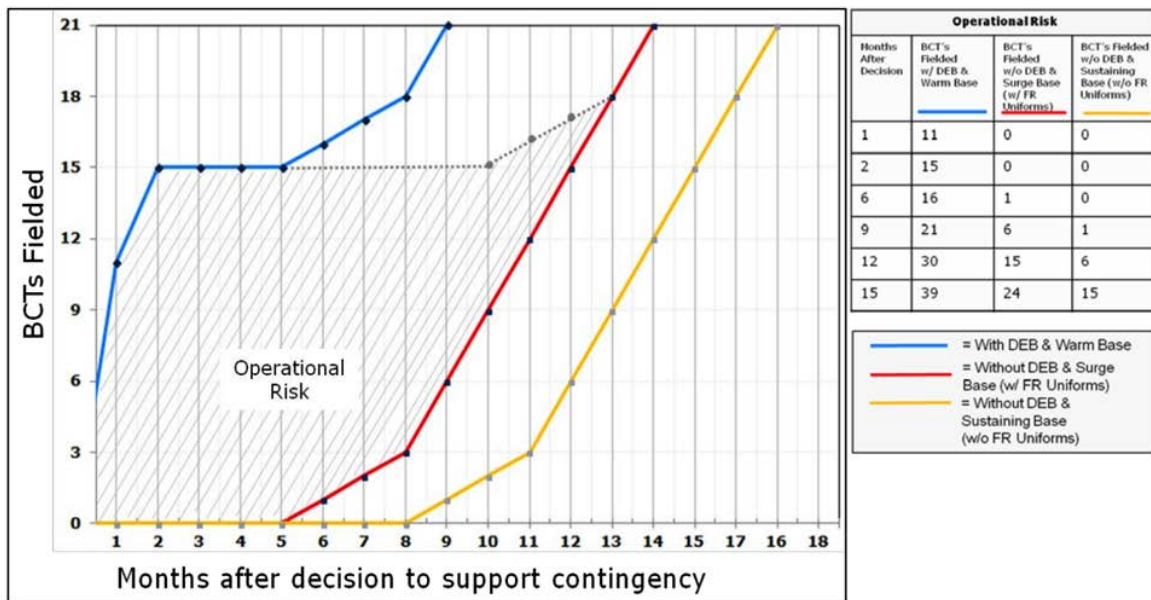


Figure 1. Potential Operational Risk with Equipping Immediate Deployers
 Source: Project Manager Soldier Protection and Individual Equipment (PM SPIE) (2013).



B. PURPOSE

This project examines the challenges and barriers to acceptance for the United States Army implementing a DEB concept for organizational clothing and individual CCE. The DEB concept would be funded in a non-contingency environment with Operations and Maintenance Army (OMA) base funding. The DEB concept is analyzed for strengths, weaknesses, opportunities, and threats to identify advantages and disadvantages. Class II (CLII) materiel legacy operations for procurement, storage, and issuing from supply is analyzed. Army pre-positioned stock (APS) concept for Class VII (CLVII) is comparatively analyzed for parallel processes. Additionally, this research examines the United States Marine Corps (USMC) for comparison of how they operate their pre-positioned class II materiel equivalencies.

C. RESEARCH QUESTIONS

To identify DEB challenges and barriers to acceptance, our research examines the following questions:

Primary Question: What are the challenges and barriers to acceptance for the USA to adopt and implement the DEB concept for organizational clothing Class II materiel?

Secondary Questions:

1. What is the Army's legacy operation for the procurement, storage and issuing of organizational clothing and individual equipment (OCIE)? What is the Army's desired CCE readiness level?
2. Using comparative analysis, what is the USMC organizational clothing equivalencies operation? Why does the Army pre-position heavy equipment and not FR Army Combat Uniform (ACU) and CCE items?
3. What are the advantages and disadvantages of the DEB concept? How does the DEB affect Commercial Industry's ability to ramp-up to full-rate production?

D. METHODOLOGY

This project reviewed a substantial amount of literature, to include applicable concept plans, memorandums, cost benefit analyses, organizational charts, standard operating procedures, and official government reports related to the DEB concept, pre-



positioned stock, and CLII materiel/equivalencies. Data was analyzed through a comparative analysis of strength, weakness, opportunity, and threats (SWOT) as a way of identifying DEB challenges and barriers to acceptance.

E. ASSUMPTIONS

This document makes a number of assumptions when analyzing and comparing a DEB state to a status quo alternative. These assumptions are made to assist us in our research and analyses. The assumptions made are

- In a non-wartime environment, PEO Soldier operates rapid fielding initiative (RFI) as a low-intensity operation dependent on fiscal resources directly proportional to the number of outside continental United States (OCONUS) mission-deployed Soldiers.
- 15 BCTs is a reasonable number of planned first deployers in the event of one or more simultaneous major contingencies.
- Fielded Soldier OCIE must be replaced at an annual 10% degradation due to wear and tear.

F. REPORT ORGANIZATION

This report is organized into five separate chapters with supporting data, Figures as required.

Chapter I introduces the DEB concept topic and provides a summary of purpose and methodologies. This chapter identifies the secondary research questions used to gain answers and ultimately address the primary research question: What are the challenges and barriers to acceptance for the USA to adopt and implement the DEB concept for organizational clothing Class II materiel? The chapter concludes with an outline of the thesis.

Chapter II provides the background information about Organizational Clothing and Individual Equipment (OCIE). Specific areas of interest include current regulations governing OCIE activity, a summary of OCIE operations, and the Rapid Fielding Initiative (RFI) for contingency operations. OCIE is explored across the USA and the USMC as applicable. The purpose of this chapter is to capture a snapshot of status quo operations.



Chapter III provides a literature review of the documents defining Army pre-positioned stock and the DEB concept in order to provide a context for later analysis.

Chapter IV presents an analysis of the DEB concept. DEB is analyzed using the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTmLPF-P) template. Additionally, DEB is analyzed through the lens of a SWOT analysis. Next, we perform quantitative analysis to subjectively differentiate between a DEB and non-DEB state of operation. This chapter concludes with a sensitivity analysis of how evaluation criteria could be weighted differently to support a different outcome.

Chapter V concludes the project with a summary of conclusions based on analyses from earlier chapters. Conclusions are tied to the content in the previous chapters and inferences from analyses. Ideas and opportunities not reviewed in this project are provided as future research areas. Chapter V ends with our closing conclusions and recommendations.



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II. BACKGROUND

This chapter provides insight on the regulation requirements for both the U.S. Army's organizational clothing and individual equipment (OCIE) and the USMC's individual clothing and combat equipment (ICCE) operations. Additionally, this chapter provides a preliminary comparative analysis of the USMC ICCE operations to the U.S. Army's central issuing facility (CIF) and RFI operations in an attempt to highlight differences that may be leveraged and discussed in Chapter IV.

The USMC designates Individual Clothing and Combat Equipment as two separate entities of which both are issued to a Marine upon initial entry into service and is required to be maintained throughout the entirety of a Marine's service. Individual clothing articles consist of items such as a Marine's blouse, trousers, belt, boots and other items (see Table 1). Combat equipment, typically issued for the duration of a Marine's tour on a particular duty station, consists of combat equipment such as helmets, modular tactical vests (see Figure 2), the family of load bearing equipment (see Figure 3), and other similar items (see Table 2).



Table 1. List of United States Marine Corps Individual Clothing Issue.
Source: DON USMC (2016).

Individual Equipment Article	Quantity
Jacket, Atheletic	1
Nexcktime: Khaki	2
Pants, Athletic	1
Shirt, Polyester/Wool, Khaki, Quarter-Length-Sleeve	3
Shirt, Polyester/Wool, Khaki, Shade M-1 Long-Sleeve	2
Shoes, Dress: Black, PR	1
Socks: Boot, Coyote Brown, PR	6
Socks: Athletes, PT, White, (3) Pair Package	1
Sweater: Pull-Over, Olive Drab, w/Epaulettes	1
Sweat Pants: Green w/Insignia	1
Sweat Shirt: Green w/Insignia	1
Trousers, Combat Utility: Desert MARPAT w/Embroidered Desert MARPAT Name Tape (w/Permethrin)	3
Trousers, Combat Utility: Woodland MARPAT w/Embroidered Woodland MARPAT Name Tape (w/Permethrin)	2
Blouse Combat Utility: Desert MARPAT w/Embroidered Desert MARPAT Name Tape (w/Permethrin)	3
Blouse Combat Utility: Woodland MARPAT w/Embroidered Woodland MARPAT Name Tape (w/Permethrin)	2
Trousers All-Season Polyester/Wool Gabardine, Green, PR	2
Trousers, Blue	1
Undershirt, Cotton, White, Crew-neck	3
Undershirt: Cotton, Olive Drab	3
Waistplate, Plain	1
Bag, Duffel: w/Carrying Strap	2
Belt, Reflective, Safety	1
Belt, Trousers: Web, Khaki, w/Gold Plated Tab	1
Boots, Marine Corps Combat: Hot Weather (HW), PR	1
Boots, Marine Corps Combat: Temperate Weather (TW), PR	1
Buckle: F/Belt, WEB, Khaki, Gold Plated	1
Cap, Combat Utility: Field, Desert MARPAT w/Embroidered Emblem	1
Cap, Combat Utility: Field, Woodland MARPAT w/Embroidered Emblem	1
Cap, Combat Utility: Garrison Desert MARPAT w/Embroidered Emblem	1
Cap, Combat Utility: Garrison Woodland MARPAT w/Embroidered Emblem	1





Figure 2. Modular Tactical Vests. Source: Modular Tactical Vest (n.d.).



Figure 3. List of United States Marine Corps Individual Combat Equipment. Source: United States Marine Corps (n.d.).

Table 2. List of USMC Combat Equipment.
Source: United States Marine Corps (n.d.).

Combat Equipment Article	Quantity
Three-Sleeping System	1
Cnteen w/Cover	2
ISO Mat	1
Pouch, Sustainment	3
Bladder, Hydration	1
Kit, Repair	1
Pads, Elbow	1
Pads, Knee	1
Trousers, Gortex	1
Blouse, Gortex	1
Fleece, Tan	1
Fleece, Cap	1
Bag, Waterproof	2
Sling, Three Point	1
Sling, Parade	1
Goggles, ESS	1
Glassess, ESS	2
Carrier, Entrenching	1
Tool, Entrenching	1
Tarp	1
Liner, Poncho	1
Poncho	1
Pouches, Magazine	2
Gloves, Gortex	2
Sack, Compression	1

For the U.S. Army, organizational clothing and equipment is worn in both combat and training environments. Like the USMC, the U.S. Army has two types of Soldier equipment: individual and organizational. Individual equipment, issued to Soldiers upon their entry into the U.S. Army, consists of basic items required for a Soldier to conduct daily business. These items include, dress blues, duffel bag, combat boots, patrol cap, operational camouflage pattern (OCP) Army combat uniform (non-FR), and a myriad of other items (see Figure 4 for examples of individual clothing). Organizational clothing items are issued on a loan basis via installation central issuing facilities to Soldiers while assigned to their respective home station installations. These organizational items include, laundry bags, improved outer tactical vest [IOTV], elbow/knee pads, hydration system, rucksack, load carrier vests, assault pack, combat helmet, and other equipment (see Figure 5).



 <p>COAT MAINT, ARMY DARK BLUE POCKETS W/LAP AND BUTTON CLOSURE, WINTER UNIFORM, BLUE, US ARMY, US MAIN BODY</p> <p>Unit price: \$185.50</p>	 <p>BOOTS: INTERMEDIATE C WATERPROOF OVERALL AND MILDEW RESISTANT OVERALL, BLACK OVERALL BOOTS/INTERMEDIATE COLD WEATHER TAN OVERALL</p> <p>Unit price: \$83.77 TAN: \$117.26</p>	 <p>BAG DUFFEL: NYLON DUC GREEN, CAMOUFLAGE, 483 ADJUSTABLE STRAP ATTACHED TO EACH SIDE, PADDED SHOULDER STRAPS AND QUICK RELEASE ADAPTER ON EACH END OF SHOULDER STRAPS</p> <p>Unit price: \$22.90</p>	 <p>CAP, PATROL, ARMY COMBAT UNIFORM RIBER MATERIAL, COTTON AND NYLON MAIN BODY, CLOTH NAME IS WIND RESISTANT POPLIN MAIN BODY, FABRIC DESIGN IS WOVEN RIPSTOP, HEADWEAR TYPE IS SOFT CROWN, BRIM TYPE IS VISOR, ENVIRONMENTAL PROTECTION IS WATER REPELLENT</p> <p>Unit price: \$6.92</p>
			

Figure 4. U.S. Army Individual Clothing. Source: Central Issue Facility Torii Station (n.d.).

 <p>LAUNDRY BAG GREEN, OLIVE, MTP EDITION SUTHERN, M6-C-02096, CLASS 1 SINGLE HANG</p> <p>Unit price: \$4.84</p>	 <p>KOTV (COMPLETE) IMPROVED OUTER TACTICAL VEST 20710 COMPLETE, BODY ARMOR, UNIVERSAL CAMO PATTERN</p> <p>Unit price: \$479.28</p>	 <p>COVER HELMET ACH MULTICAM COVER, ADVANCED COMBAT HELMET, MULTICAM</p> <p>Unit price: \$18.64</p>	 <p>CANTEEN, WATER 307 1.0-QUART SUBSTRATE, COLLAPSIBLE, WITH M6 CAP OLIVE DRAB/10 STD 3487 PLASTIC</p> <p>Unit price: \$9.40</p>	 <p>ELBOW AND KNEE PAD SET ONE SIZE KNEE AND ELBOW PAD SET 34910, ONE SIZE FITS</p> <p>Unit price: \$22.90 MULTICAM: \$32.00</p>
 <p>HYDRATION SYSTEM HYDRATION SYSTEM MOLLE, STYLE NUMBER 3089 UNIVERSAL CAMO/PATTERN WOODLAND CAMO DESERT CAMO</p> <p>Unit price: \$24.43 DESERT: \$77.83 WOODLAND: \$37.81</p>	 <p>RUCKSACK LARGE FIELD PACK MOLLE RUCKSACK, LARGE FIELD PACK, MOLLE, STYLE NUMBER 4180 UNIVERSAL CAMO/PATTERN WOODLAND CAMO DESERT CAMO</p> <p>Unit price: \$82.86 WOODLAND: \$137.74 DESERT: \$81.86 MULTICAM: \$96.23</p>	 <p>SET, FIGHTING LOAD CARRIER FIGHTING LOAD CARRIER (FLC) SET, MOLLE, STYLE NUMBER 8127 UNIVERSAL CAMO/PATTERN WOODLAND CAMO DESERT CAMO</p> <p>Unit price: \$43.34 WOODLAND: \$37.95 DESERT: \$58.90</p>	 <p>ASSAULT PACK ASSAULT PACK, MOLLE, STYLE NUMBER 4180 UNIVERSAL CAMO/PATTERN WOODLAND CAMO DESERT CAMO</p> <p>Unit price: \$89.43 WOODLAND: \$74.78 DESERT: \$58.89 MULTICAM: \$89.43</p>	 <p>ADVANCED COMBAT HELMET (SHOUL ONLY) (HELMET SHELL ONLY), 4-POINT CHINSTRAP, COLOR, YOUNG GREEN SHW WITH ONE VENT HOLE AND WITHOUT ANT PAD SUSPENSION</p> <p>Unit price: \$204.42</p>

Figure 5. U.S. Army Organizational Clothing. Source: Central Issue Facility Torii Station (n.d.).

A. ORGANIZATIONAL CLOTHING AND INDIVIDUAL EQUIPMENT

Whether in a garrison, training, or combat environment, the armed forces deems organizational clothing and individual equipment as CCE and personal protective equipment (PPE).

1. Service Regulations

Service regulations are documents defined in explicit detail, the guidance and policies of which service members are required to follow.

a. United States Marine Corps

The USMC uses only one logistical strategy for ICCE operations regardless of the operational environment that exists. That guidance is specified in USMC Corps Order (MCO) 4400.201 (DON USMC, 2016). Additionally, the USMC guidance for long-term ICCE storage is specified in MCO 4400.196A (DON USMC, 2015).

MCO 4400.201-V13, Individual Clothing, Flags, personal Effects, “and the Consolidated Storage Program, [provides] guidance for the administration and management of individual clothing, flags, personal effects, and [storage]”(DON USMC, 2016, p. 1-2) Additionally, it provides “guidance for the governing, construct, roles and responsibilities, and integration across the USMC for the management of the CSP [which] consists of the individual issue and unit issues facilities” (DON USMC, 2016, pp. 1-14, 9-2). MCO 4400.201-V13 provides USMC commanders the specifics of Marine clothing allowances; ICE (Individual Combat Equipment) record keeping; sources of supply, retention, recovery, and replacement of individual clothing; and guidance to the consolidated storage point on “the centralized inventory management of [infantry combat equipment]” (DON USMC, 2016, p. 1-8).

MCO 4400.196A, the intent of this order is to “provide broad guidance and responsibilities for centralized management of ICCE, and operation and management of [IIFs and UIFs]” (DON USMC, 2015, p.1). Additionally, the order promotes operational management and equipment readiness of CSPs through asset management, equipment



accountability, and optimization of inventory. Additionally, it provides guidance on methods of decreasing total support costs for life cycle management of CSP inventory.

MCO 4400.150 provides guidance and policy to ensure standardization of consumer-level supply operations regardless of the environment. This policy ensures that “processes and procedures are in compliance with Department of Defense (DOD) regulations for supply and financial management” (DON USMC, 2014, p. 4). MCO 4400.150 concentrates and governs supply operations at the unit level of inventory.

b. United States Army Regulations

OCIE class II operations are managed within three separate levels of Army logistics: strategic, operational, and tactical. Each level navigates a myriad of Army regulations that crisscross a wide logistical OCIE framework. All levels tie one regulation to another regulation at a separate, yet vital, level of the OCIE framework.

Majors Weestrand and Gilbert (2015) state, “Theater level sustainment operations aims at providing effective warfighter support with greater efficiency linking the strategic industrial base to tactical formations, specifically by optimizing theater level OCIE inventory and processes” (Weestrand & Gilbert, 2015, p. 16). For example, through implementation of a Lean Six Sigma (LSS) strategy, the 21st Theater Sustainment Command, synchronizing with the LSS project team members, reallocated excess OCIE inventory worth over \$14 Million to “six different installations” (Weestrand & Gilbert, 2015, p. 19). According to Weestrand and Gilbert, “The redistribution of [theater level] OCIE stocks offset future requirements at these installations, saving the United States Army future dollars spent” (Weestrand & Gilbert, 2015, p. 19).

(1) Strategic Level Regulations

AR 710-2, Policy for Supply Operations below the National Level (DOA, 2008b), provides guidance during both “peace and war for the supply management and operations of Corps Support Command (COSCOM), Theater Army Area Command (TAACOM), and other [Materiel Management Centers (MMCs)] above division and below division, [specifically stating, the process requirements for managing equipment stored at] direct, general, or installation Supply Support Activities for issue to a customer (SSAs)” (DOA,



2008b, pp. 1, 13). Additionally, AR 710-2 instructs the deputy chief of staff army logistics (G4) to establish an Army supply policy, evaluate requests for additional procedural publication, deviation from existing procedural publication, review and approve implementation of existing procedural publications (DOA, 2008b).

AR 740-1, Logistics: Storage and Supply Activity Operations, provides guidance for the management of materiel storage and supply operations. Specifically it instructs the Deputy chief of staff G4 and subordinate commands to develop and submit concepts and long range plans for future worldwide storage and maintenance of Army Pre-positioned stocks (described in greater detail in Chapter IV), equipment storage space requirements, justification for new facilities storage requirements, quality control (QC), and the reliable management of supplies and equipment in support of the Army's supply distribution system (DOA, 2008c). Lastly, AR 740-1 provides guidance for the identification, control, and utilization of shelf-life OCIE items (DOA, 2008c).

(2) Operational Level Regulations

Section II, Chapter 10 of the Common Table of Allowances (CTA) 50-900 authorizes a central issuing facility's to requisition, distribute, care for, replace, account for, secure, stock, mark, inspect, inventory, recover, and dispose of OCIE. (Fort Carson Logistics Readiness Center, 2016). There is a central issuing facility located on nearly all Army installations.

Common Table of Allowances 50-900, Clothing and Individual Equipment, provides guidance for the issuance of OCIE in specific climate zones, mission requirements, and military occupational specialties. CTA 50-900 states that in conjunction with CTA 8-100 and 50-970, "it is the only department of the Army (DOA) authorization document [used] for individual and organizational clothing and equipment." (DOA, 2008a, p. 1). CTA 50-970 additionally provides an authorization document for OCIE according to the provisions of Army Regulation 71-32 and 700-84 (DOA, 2008a, p. 1).

AR 71-32 governs that CTA 50-970, Expendable/Durable Items (except medical, ammunition, repair parts, and heraldic items), provide policies and guidance for a "flexible basis of issue, which may be used to acquire selected items of



expendable/durable equipment and provides guidance for determining initial issue and stockage levels of expendable/durable items required to accomplish their mission” (DOA, 2005, p. 1). As an example, the computation in Figure 6 reflects the quantity required for a force of 1,500 personnel for a three-month period using a basis of issue 1 per 100 individuals per month.

1500	Number of personnel
<u>x 3</u>	Number of months
4500	
Total personnel months	
<u>/ 100</u>	Personnel factor
45	
<u>x .1</u>	Quantity Factor
4.5	
Items required for stockage level	

Figure 6. Computation for 1,500 Personnel over a Three-Month Period. Adapted from DOA (2005, p. 1).

Army Regulation 71-32, Force Development and Documentation provides guidance to the Deputy chief of staff G4 and army procurement and resources deputy chief of staff (G8) on the development “and documentation of [Army force structure programs, force accounting], personnel and equipment requirements and authorizations, [and associated force management activities]” (DOA, 2013b, p. 1). The force management system is the information technology system for all basis of issue plans required for the planning and programing of acquisition requirements. By identifying and documenting both personnel and equipment requirements, basis of issue plans are developed for new or improved items of equipment and materiel development (DOA, 2008a).

Army Regulation 700-84, Issue and Sale of Personal Clothing provides guidance for the “issue and sale of personal clothing” (DOA, 2014b, p. 5). Specifically, it directs the deputy chief of staff G4 and the Army Materiel Command to make periodic inspections to the Army Military Clothing Store to ensure compliance with established policies and procedures. Lastly, Army Regulation 700-84 directs unit commanders to



ensure that only a Soldiers OCIE listed in the CTA 50-900 are inventoried and inspected and then subsequently entered on their personal clothing records (DOA, 2014b).

Forces Command Regulation 700-2, FORSCOM Standing Logistics Instructions delineates the logistical policies, movement planning methods, support responsibilities, pre-mobilization/deployment stockage and storage of CTA items of deployable units within the U.S. Army Forces Command. Additionally, Forces Command Regulation 700-2 dictates when “contingency plan implementation requires [the] use of Army Pre-positioned stocks for materiel sustainment support” (DOA, 1999, p. 5).

PM SPIE standard operating procedure outlines policies for operations conducted to support PM SPIE, the Logistics Management Directorate, the Fielding and New Equipment Training Operations, Materiel Readiness Operations. The PM SPIE standard operating procedure (SOP) provides guidance to stakeholders on the proper fielding of Class II and protective clothing and individual equipment (DOA, 2015b).

(3) Tactical Level Regulations

Army Regulation 735-5, Property Accountability, provides guidance for the accounting of U.S. Army property outlining and standardizing requirements and procedures. Specifically, Army Regulation 735-5 establishes “guidelines for maintaining the command supply discipline program, addressing supervisory and/or managerial responsibilities within the supply system” (DOA, 2013c, p. 1). Furthermore, Army Regulation 735-5 provides brigade, battalion, and company commander’s oversight management designating that commanders at all levels comply with policies set forth within the regulation (DOA, 2013c).

2. Operations

To understand Army OCIE operations and whether the DEB concept is accepted, a comparative analysis between the USMC and Army is presented in Chapter IV. Currently, the USMC is the only organization (non-Army) that closely resembles the Army’s mission requirements and equipment types.



a. *USMC Individual Clothing and Combat Equipment (ICCE) Operations*

Within the headquarters element, there are four separate line organizations, each handling a separate form of logistics for the USMC. The line organization that specifically manages ICE, is the Logistics Services Management Center (LSMC). See Figure 7. The LSMC states they are tasked to “monitor critical USMC ground equipment supply chain activities; plans, manages, executes, and integrates supply chain improvements; and manage multiple critical logistics programs to ensure effective and efficient support to the warfighter” (USMC, 2014, p. 3). Under LSMC there are strategically located centrally managed logistics and sustainment support centers. See Figure 8. Nested under those strategically located support centers are the Consolidated Storage Program offices which manage individual and unit combat equipment.

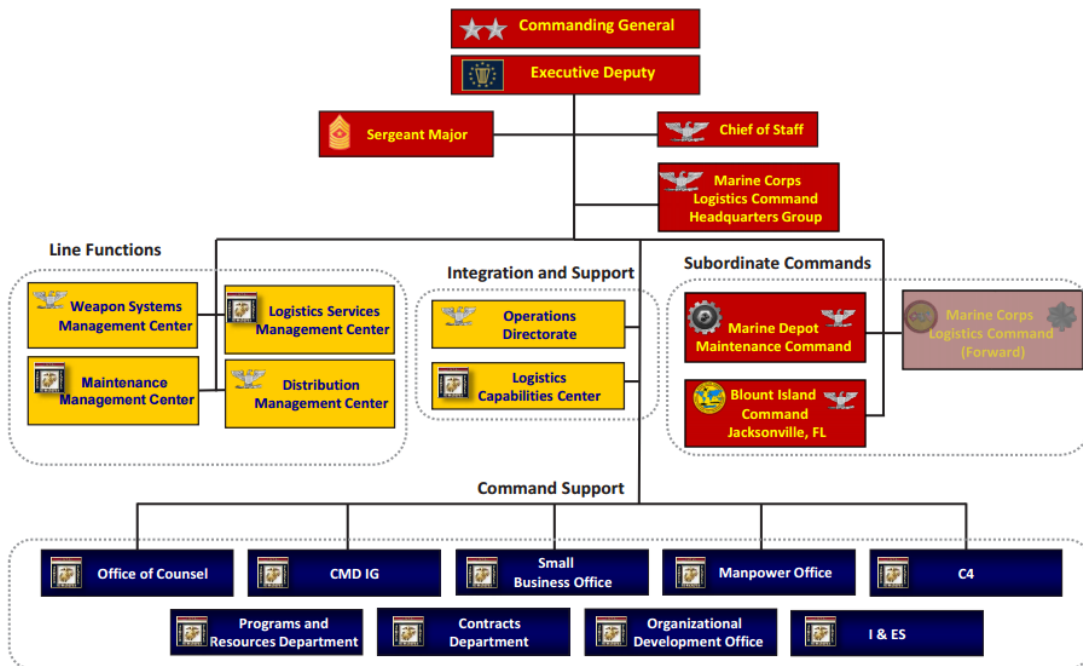


Figure 7. Marine Corps Logistics Command Structure. Source: Marine Corps Logistics Command (2016).

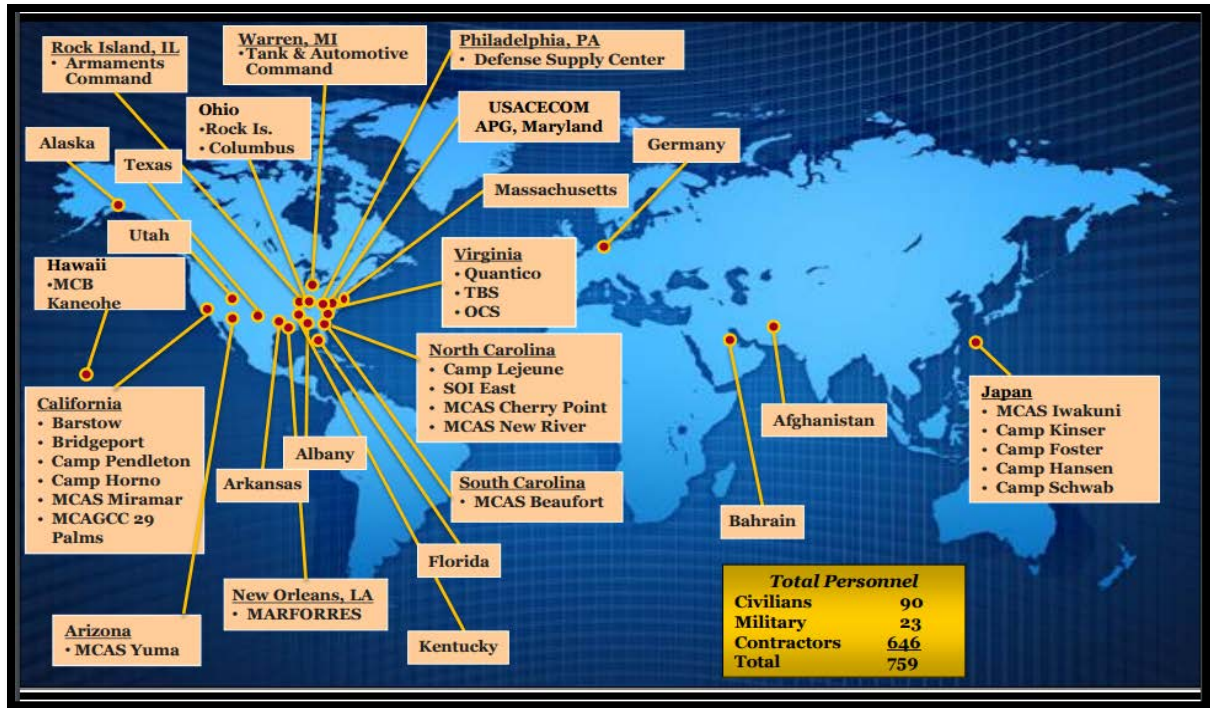


Figure 8. Logistics Services Management Centers around the Globe. Source: Janczak (2014).

In 2011, Consolidated Storage Program offices (central issuing facilities, and the consolidated storage facility) transitioned to individual issue facilities and unit issue facilities under the Consolidated Storage Program concept, illustrated in Figure 9 (DON USMC, 2011). Both individual issue facilities and unit issue facilities are tasked “to manage the issue, recovery, storage, and sustainment of [ICCE inventory such as] infantry combat equipment; chemical, biological, radiological, nuclear and [enhanced conventional weapons (CBRNE) equipment; and] special training allowance pool (STAP) equipment, to individual Marines, [unit commanders], and higher/adjacent [commands]” (DON USMC, 2011, para. 16). See Figure 10 for ICCE equipment examples.

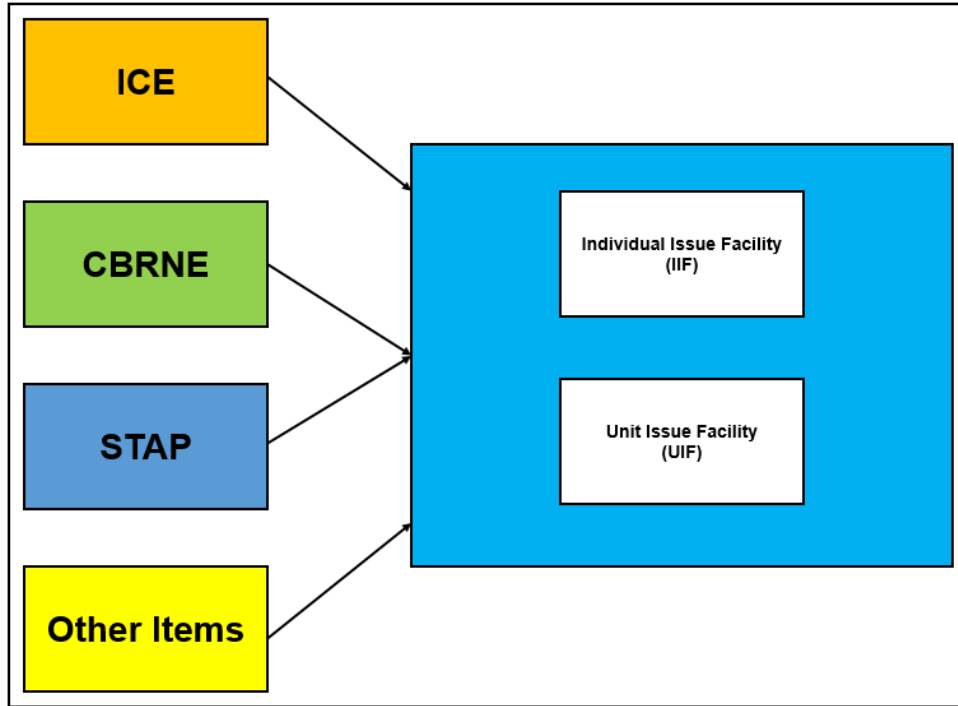


Figure 9. Consolidated Storage Program Concept. Source: DON USMC (2011).



Figure 10. Individual Combat Clothing and Equipment Examples. Source: DON USMC (2011).

The “Consolidated Storage Program [utilizes the] Asset Visibility Capability (AVC) [program] to individually track and account for all serialized items [and the] shelf life of perishable [CBRNE inventory across the network] of Consolidated Storage Program [locations] ((DON USMC, 2011, p. 46). The USMC considers the AVC program to be “the single most critical tool [that the USMC can utilize to] ensure Warfighters have what they need when they need it” (DON USMC, 2011, p. 43). Additionally, the USMC requires that the AVC program provide the total life cycle management (TLCM) data when “making [future] critical fielding and replenishment decisions” (DON USMC, 2011, p. 43). The USMC does not feel that the Consolidated Storage Program could “function without a robust and capable AVC” (DON USMC, 2011, p. 43).

The Consolidated Storage Program classifies inventory into two categories: expendable and consumable (DON USMC, 2015). Any ICCE inventory deemed non-expendable is an accountable item when issued to Marine Corps command (MARCOM) unit. Due to the extensive nature of that requirement, the USMC states “there is a need for a centralized inventory control system, to include centralized computation of requirements, procurement, initial issue provisioning distribution, and accountability of all assets owned by the USMC” (DON USMC, 2014, p. 1-15). Non-expendable items are non-consumable inventory that is recoverable to the USMC. For a better understanding of ICCE consumable goods, any form of individual clothing that would touch the skin of a Marine (e.g., undergarments), that is deemed expendable, and therefore a consumable good (DON USMC, 2014).

As displayed in Figure 11, there are 52 strategically placed CSP facilities across 21 worldwide geographic locations. Between 2011 and 2014, CSP locations repaired and replaced ICCE inventory valued at more than \$114 million dollars for redistribution (USMC, 2015). In fiscal year (FY) 2014, the CSP processed 14.9 million pieces of equipment for 518,901 worldwide customers (USMC, 2015). Marine Corps Logistics Command (MARCORLOGCOM) states that “the CSP adds value [to the logistical supply process] by rapidly providing necessary equipment to the operating force in support of worldwide mission requirements” (USMC, 2015, p. 40).



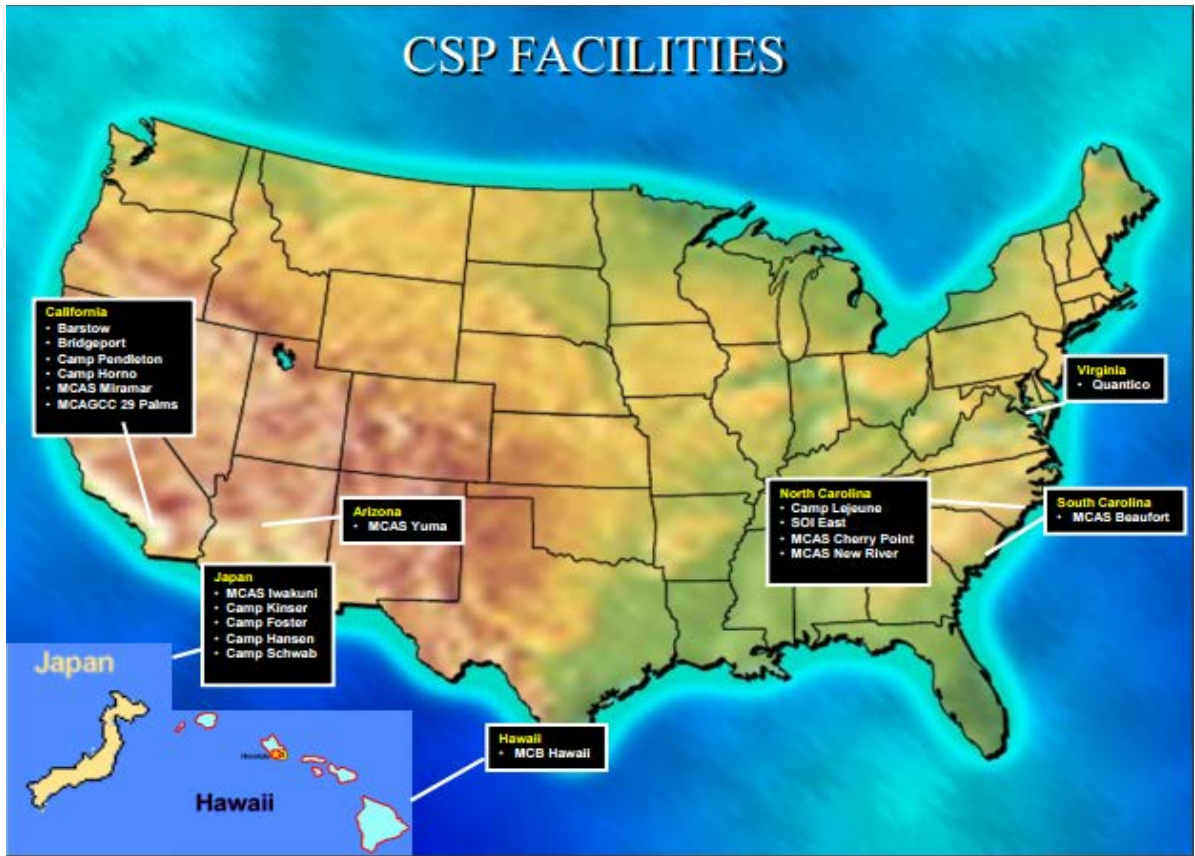


Figure 11. Consolidated Storage Point Locations. Source: DON USMC (2011).

MARCORLOGCOM regulations do not require ICCE inventory to be serially managed. Therefore, CSPs “are required to maintain gain/loss transactions [ensuring 100% property accountability] at all times. [Any and all unserviceable items discovered] shall be disposed of directly through the Defense Logistics Agency (DLA) in accordance with Department of Defense [(DOD) 4140.1-R], Supply Chain Materiel Management Procedures:” Operational Requirements; DOD 4160.28, Vol. 3—Defense Demilitarization (DEMIL): Procedural Guidance Defense DEMIL: Procedural Guidance (DON USMC, 2014, 2-27). For example, DOD 4160.28 states that “uniform clothing stores and military exchange service stores shall not be allowed to sell DEMIL required” CCE and PPE (DOD, 2011, p. 57).

Figure 12 illustrates the two key elements to the USMC supply system: wholesale inventory level (general materiel support) and the retail inventory level (direct unit support).

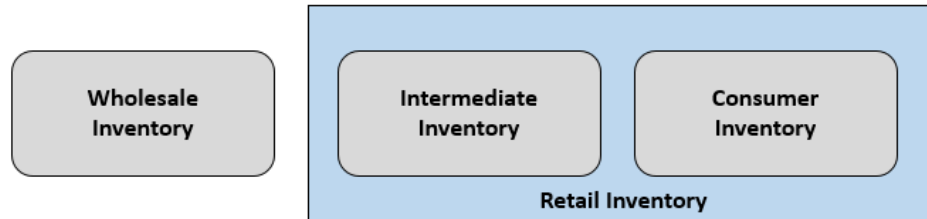


Figure 12. Inventory Levels of Supply. Source: DON USMC (2014).

The wholesale inventory level consists of a Marine Corps Inventory Control Point tasked with providing materiel management and inventory control for ground weapons systems and equipment. The Inventory Control Point is a central supply point for the USMC supply system and has explicit knowledge and control of worldwide Marine Corps inventory. Under the Inventory Control Point is the Remote Storage Activity (which is beyond the scope of this thesis) and the Direct Support Stock Control (United States Marine Corps Financial Management School, 2010).

Retail inventory is considered the lowest level of the USMC's supply system and is further segregated into two separate categories: intermediate inventory and consumer inventory. Consumer inventory is considered a unit level supply activity, primarily responsible for the distribution of equipment internal to Marine Corps units, specifically ICE and FR uniforms. As stated in MCO 4400.150, "consumer-level inventory can exist at any level whether strategic, operational, or tactical" (DON USMC, 2014, p. 1-2). When ICE and FR uniforms are requisitioned by a unit from their installation CSPs or unit issue facility (UIFs) for an upcoming deployment, consumer level supply operations ensure that the correct quantities of ICE and FR uniforms requisitioned are at the right place at the right time (DON USMC, 2014). Should an installation UIF not have the requisite quantity of equipment necessary to field units designated for deployment, those UIFs will reach back to the logistics services management centers for additional

quantities of ICE and FR uniforms. UIFs only house enough ICE and FR uniforms to support designated deploying units on their respective installations (DON USMC, 2014). ICE (FR uniforms) require central inventory control at the CSP level due to the nonexpendable nature, monetary value, requirement for training, and sensitivity of this materiel.

Intermediate inventory is managed at the direct support stockage control level and acts as the go between for consumer and wholesale inventory in support of an area of operation or a specified organization (DON USMC, 2014). The purpose of intermediate inventory is to place cash sale ICCE materiel, cleaning supplies, petroleum type items, and repair parts for basic maintenance strategically located around the world as a method of reducing logistical response times for any unit requests for ICE materiel. The materiel located within the direct support stockage supply lines is not the same materiel type located within the CSP/IIF's. For an effective unit requisition of direct support stockage materiel to take place, the process requires four actions as shown in Figure 13.

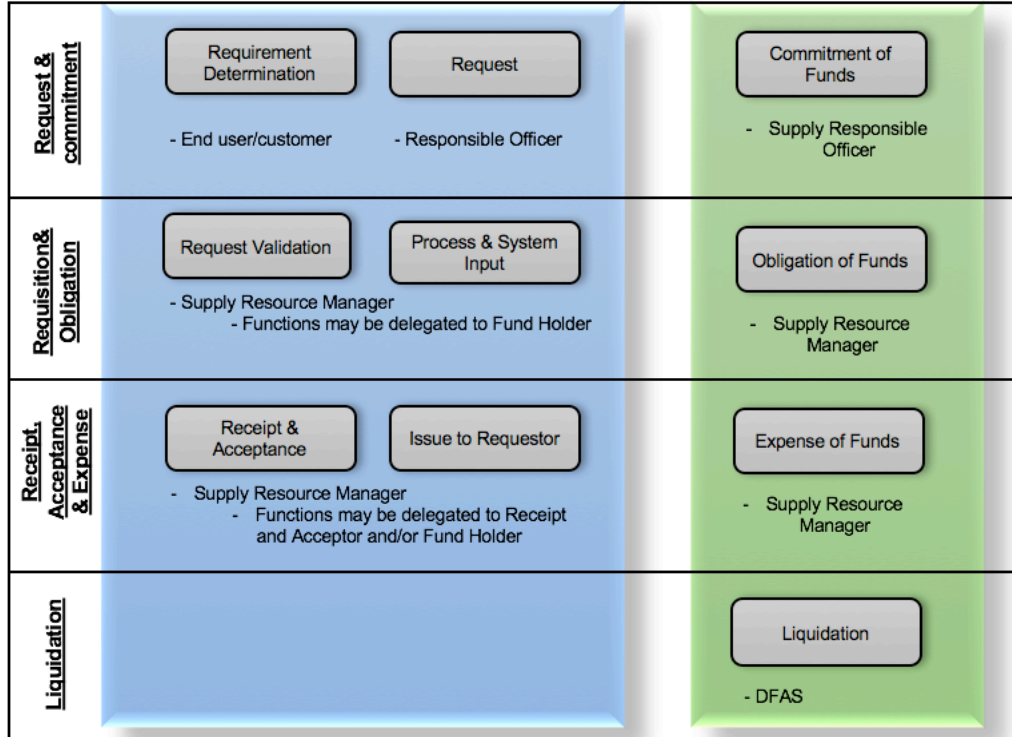


Figure 13. The Requisition Process. Source: DON USMC (2014).

The requisitioning process is initiated with a submitted unit request to the supply resource manager due to potential unit capability gaps. The next step in the process is for the resource manager to validate user requirements and capability gaps, then notify the supply officer. The supply officer then reviews the request and determines if there is a valid need for the item requested. Should the command and supply officer approve the request, the request is then pushed through the supply resource manager to generate a commitment for request, order, and funding transaction code of the item in need. Upon request validation of the item, the request is forwarded for fulfillment. Once the requested item is received, the resource manager directs it for issue. It is important to note that requisitions are a vital necessity for all MARCOM units and are maintained until disbursement at the consumer supply level (DON USMC, 2014).

b. Army Organizational and Individual Equipment (OCIE) Operations

Prior to September 11, 2001, incoming Soldiers newly arrived on installation were required to in-process at installation central issuing facilities and receive specified OCIE in accordance with CTA 50-900. CTA 50-900 specified that central issuing facilities were required to prioritize issuance of older model OCIE first (DOA, 2008a). That requirement often resulted in Soldiers being issued antiquated equipment of varying pattern. For example, Soldiers scheduled to deploy to Iraq prior to the invasion, were issued desert camouflage patterned uniforms as shown in Figure 14, and woodland camouflage patterned flack vests and Joint Service Lightweight Integrated Suit Technology, as shown in Figure 15. Quite often, due to limited supply, the desert camouflage uniforms issued to Soldiers were previously worn and already in a direct exchange serviceable state. When equipment is in a direct exchange state of serviceability, it is considered no longer suitable for use.





Photo taken of author CPT Kirouac's uniform

Figure 14. Desert Camouflage Pattern



Photo taken of author CPT Kirouac's uniform

Figure 15. Woodland Camouflage Pattern

Donald Rumsfeld's statement, "You go to war with the Army you have" (Kristol, 2004, Introduction) did not sit well with Democrats in Congress. During a congressional meeting, Connecticut Senator Christopher Dodd stated, "This [equipment condition] has been an ongoing question since the very outbreak of the conflict in Iraq. It's as old as the conflict, going back when we learned that the Humvees that were going over there were not adequately armored" (Public Broadcasting Station, 2004).

As a result of the Rumsfeld incident, all forms of logistical procurement and management required modernization enhancements (readiness) to the overall OCIE process. The OCIE modernization process (circa 2004–2006) required the Army to prepare three documents, the Supply Request Package, the modernization plan, and the Master Fielding Plan (MFP). The first document, the Supply Request Package, sent technical data to the Defense Logistics Agency wholesale. The second document, the modernization plan, delineated the implementation of new OCIE and the phasing out of older antiquated OCIE. The third document, the MFP, supported the central fielding and funding of designated units for deployment on the upcoming patch chart. For understanding, a patch chart is nothing more than a list of units slated for an upcoming deployment. The Army used the Supply Request Package, Master Fielding Plan, and modernization plan as templates for coordinating budget, fielding, and modernization of designated items needed for priority elements during a prescribed timeframe (traditionally three years). After production of the designated OCIE items was complete, priority units received the required equipment, in addition to CIF facilities, and war reserve stocks, as needed.

OCIE equipment designated for replacement was required to be issued to exhaustion. However, it was issued to units not designated for upcoming deployment. By exhausting current supplies, this allowed residual stocks to diminish, eliminating any future need of disposal.

In 2006, Army vice chief of staff, General Richard A. Cody, commissioned the formation of an Integrated Process Team with the intent of determining the most optimal way of managing OCIE for the foreseeable future. As a result, General Cody commissioned the central management office with the mission of “providing total asset visibility of OCIE with the intent of improving inventory management while enhancing Army Total Life Cycle Systems Management” (Organizational Clothing and Individual Equipment Central Management Office [OCIE CMO], 2016b, para. 2). The Central Management Office’s vision was to “manage the Soldier as a system and to optimize OCIE sustainment policies and processes under the Army Force Generation model as part of the PEO Soldier’s OCIE life cycle management strategy” (OCIE CMO, 2016a, vision).



The OCIE Central Management Office (OCIE CMO) works as a subordinate to the U.S. Army Tank-Automotive and Armament Command and collaborates with the Army G4 Integrated Logistics Support Center and PEO Soldier, as shown in Figures 16 and 17 (OCIE CMO, 2016a, para. 2).

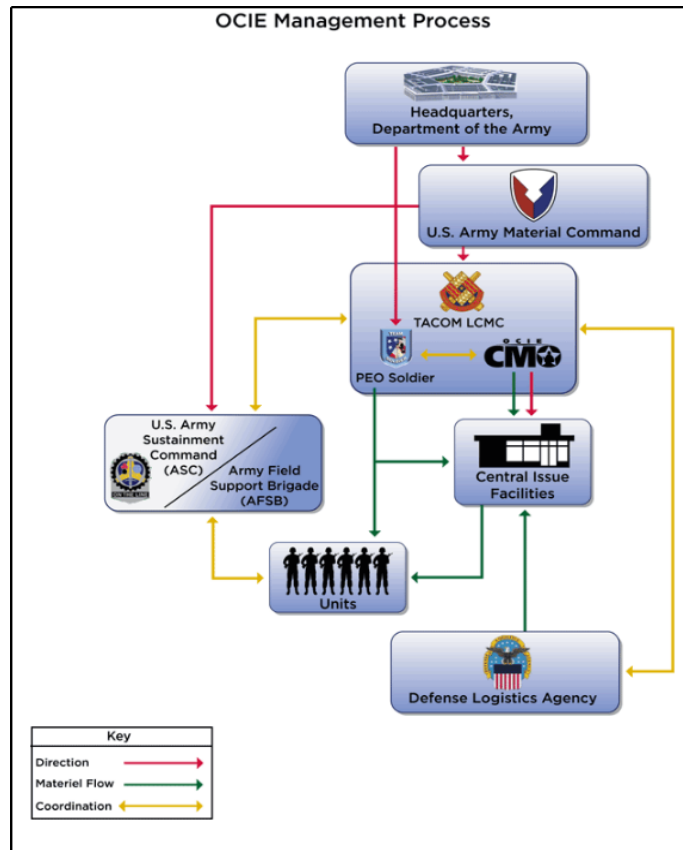


Figure 16. OCIE Management Process. Source: OCIE CMO (2016a).

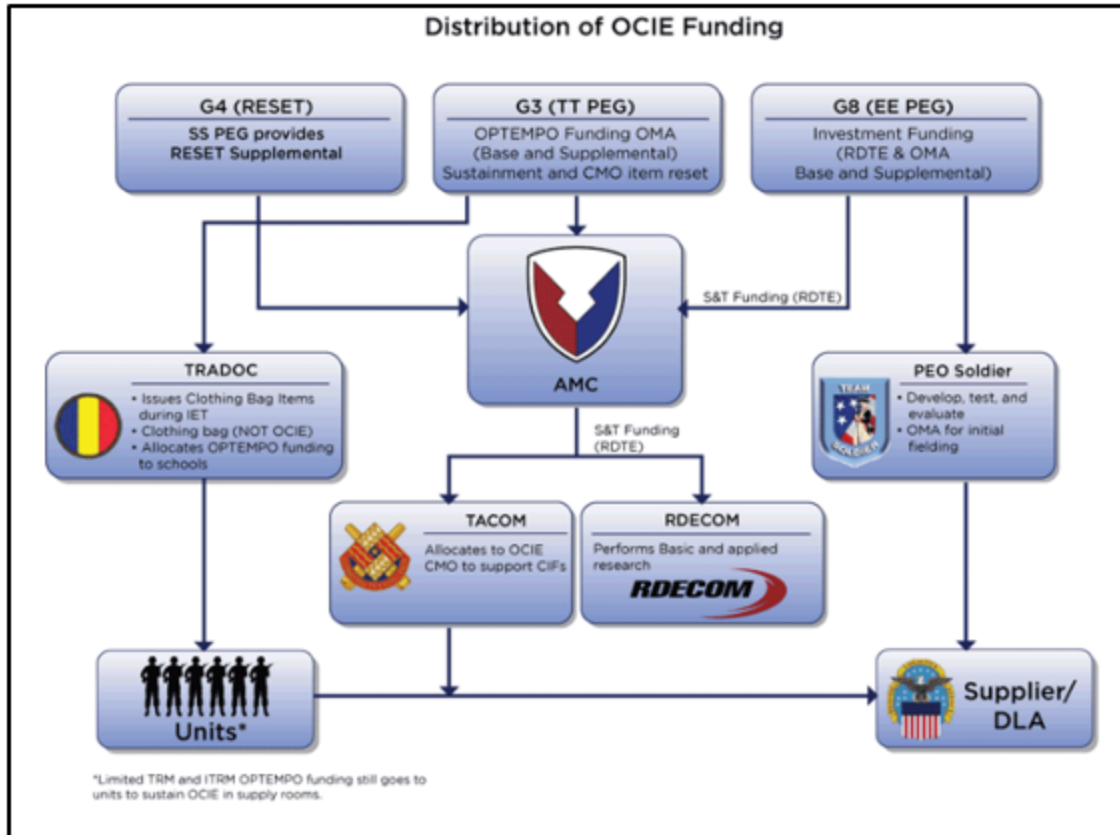


Figure 17. OCIE Funding Distribution Process. Source: OCIE CMO (2016a).

The Army central point of contact would now become the OCIE CMO, which worked closely with PEO Soldier and DLA. The OCIE CMO was tasked with synchronizing sustainment activities for all OCIE items and providing disposition instructions for lateral transfer of any and all excess OCIE with the goal of maintaining total asset visibility (TAV; OCIE CMO, 2016a, para. 3).

The scope of the CMO is limited to asset management and sustainment of OCIE assets across the Army. The OCIE life cycle management approach is managed in accordance with AR 70–1, Army Acquisition Policy. Headquarters, Department of the Army (HQDA) G8 tasked PEO Soldier with the responsibility of equipping the Army and recommending the scope of initial fielding necessary. Initial fielding quantities are “determined based on [G-8] guidance, urgency, operational needs, industrial capacity and available funding” (Department of Defense Inspector General (DODIG), 2007, p. 21).

Once quantities and timelines are established, the program manager (PM) identifies and coordinates with the appropriate agencies to achieve the most effective means for procuring, fielding, sustaining and training of the item. CMO provides asset visibility, usage data, readiness data and other information to facilitate PM planning.

The Life Cycle Management Command is the Army's central point for data gathering and analyses. Its mission is to ensure that the phase-in plan for newly introduced OCIE include up-front funding, a residual inventory reduction plans, sustainment strategy, and life-cycle cost estimates for the new OCIE items (OCIE CMO, 2016a, para. 4).

As OCIE pertains to army military clothing stores (AMCS), Soldiers use the AMCS to replace lost OCIE as a method of avoiding the statement of charges process. Nevertheless, the Army chooses not to stock high quantity levels of OCIE items in the AMCS due to excessive management and inventory costs.

Per DLA guidance, the AMCS does not stock high dollar items in stores (e.g., sleeping bags, rucksacks, body armor, etc.). Funding to maintain higher valued items in the AMCS would require additional funding to the Army stock fund and an Unfunded Requirement (UFR) for base dollars to support that initiative. This increased funding requirement prompted the introduction of the Rapid Fielding Initiative.

B. RAPID FIELDING INITIATIVE

In 2002, first deployers to Operation Iraqi Freedom reported individual equipment shortages where “[the] current budget did not allow Soldiers and units to have needed equipment available when they deployed, and the timeline for receiving the equipment was too long” (Whaley & Stewart, 2014, p. 538). In response to identified deficiencies and Soldier feedback, the vice chief of staff of the Army directed PEO Soldier to create a process to quickly distribute “mission-essential clothing and equipment” (DODIG, 2007, p. 1). The rapid fielding initiative was direct compliance to vice chief's order. RFI is a process that the Army uses to distribute and equip OCIE materiel at the Soldier level (Carrier, 2007). RFI “expedites acquiring and fielding up-to-date off-the-shelf clothing, individual equipment, tentage, organizational tool kits, hand tools, administrative



supplies, and equipment CLII to support Soldiers” (DODIG, 2007, p. 1). RFI also specifically includes FR uniforms, the new standard for deploying Soldiers.

RFI originally provided 49 items to 119,000 Soldiers deploying in support of both Operation Iraqi Freedom and Operation Enduring Freedom in 2004 (Goerger, Crino, McCarthy, & Griffin, 2007, p. 4). Later, RFI expanded to include limited initial issue items required for specific camouflage-patterned CCE and eventually became the standard process for issuing to deploying Soldiers (Goerger et al., 2007, p. 4). RFI has continuously operated, since its beginning in fiscal year 2004 (see Figure 18), using emergency supplemental funding (DODIG, 2007). Once Overseas Contingency Operation (OCO) funding discontinues, RFI becomes an unfunded process. Presently, RFI equips approximately 60,000 Soldiers per year (Hoffman, 2016).

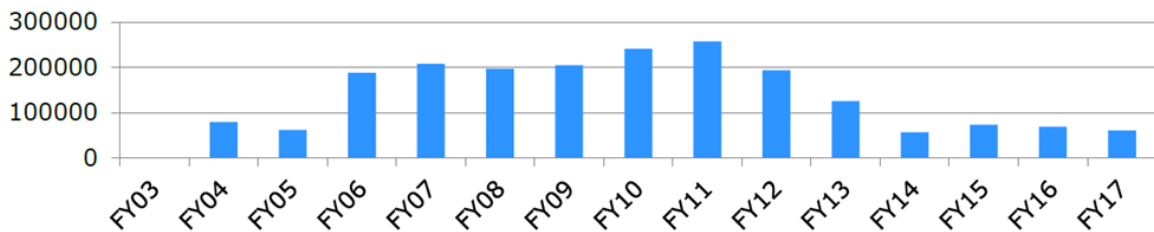


Figure 18. Number of Soldiers Issued RFI by Fiscal Year. Source: Hoffman (2016).

RFI uses both existing programs of record for clothing, individual equipment, and commercial-off-the-shelf (COTS) purchases to outfit Soldiers with the equipment they need for the warfight (Whaley & Stewart, 2014, p. 538). PM SPIE briefed to industry that the list of RFI materiel is “updated, validated and resourced annually” (Hoffman, 2016, slide 37). Annual additions, deletions, and other changes keep the RFI list current. Table 3 provides a list of FY14 approved RFI on-hand storage materiel requirements in order to successfully field one Soldier the proper sizes on clothing and equipment.

Table 3. RFI for One Soldier in FY14. Source: Mortlock & Super (2014).

RFI FOR ONE SOLDIER			
Item	No of Sizes/ Variants	Item	No of Sizes/ Variants
A2CU COAT (OCP)	15	GHILLIE HAT	1
A2CU TROUSERS (OCP)	15	GHILLIE SUIT ACCESSORY KIT, FR, OCP	1
A2CU, FG Cotton Undershirt -o	8	GLOVES-WINTER	5
ACU FR (OCP) , Coat	37	Helmet Cover (OCP)	3
ACU FR (OCP) , Trousers	36	Holster, Pistol (OCP)	1
Army Combat Shirt (ACS) (OCP)	7	ICVC (OCP)	15
Army Fuel Handlers Coveralls (TAN)	6	IMPROVED FIRST AID KIT (OCP)	1
Army Patrol Cap (OCP)	14	Improved Helmet Retention System	2
Army Sun Hat (OCP)	14	Infrared, IR Strobe – Small	1
Bandage, Gauze Combat	1	IOTV, GEN II, Complete (OCP)	11
Battery, Non-Chargeable	1	IR Flags	1
Bladder, Hydration System (100oz New)	1	Knee & Elbow Protection System (OCP)	1
BOOTS, Aviation/CVC Hot Weather Boots (FR)	112	Light Weight Performance Hood	1
BOOTS, HWMCB Bates EO3612 - (HOT Weather)	106	MOLLE, Rucksack, Medium (OCP)	1
BOOTS, MC Belleville 950 - (Temperature Weather)	106	MOLLE, Grenadier Set (OCP)	1
BRACKET, LEVER (NOD)	1	MOLLE, Medic Set (OCP)	1
Brassiere	5	MOLLE, Pistolman Set (OCP)	1
COAT, GHILLIE SUIT BASE LAYER, FR, OCP	10	MOLLE, Saw Gunner Set (OCP)	1
Disinfecting Kit	1	NAPE Pad (OCP)	2
Ear Plugs, Combat	3	PANTS, ARMY COMBAT, Guard, Piolet (Removable)	1
ECWCS BOTTOM KIT (OCP)	15	PANTS, ARMY COMBAT, Without KneePAD+Piolet	18
ECWCS TOP KIT (OCP)	15	PROTECTIVE OUTER GARMENT (POG)	6
EYEWEAR KIT, One size fits all	1	PROTECTIVE UNDER GARMENT (PUG)	6
FR ACU Patch Kit (OCP) - Soldier Issue	1	Rank, Patch (OCP)	22
FREE BOTTOM KIT (OCP)	18	Rank, Pin-On	22
FREE SOCKS (4 PK)	5	Rifleman Set (w/TAP) (OCP)	1
FREE TOP KIT (OCP)	18	Strap, Eyewear, Retention	1
FREE, Gloves (OCP)	2	Strap, Involuntary, Restraint	1
FREE, Rigger Belt (OCP)	6	TCAPS	2
GEN 3 Combat Gloves	6	Tool, Rescue	1

Once purchased, the clothing and equipment items are staged at various warehouses and staging facilities with a central storage facility located in Lansing, MI (Mortlock & Super, 2014). The Army Campaign Plan determines deployment numbers



and is used to create a master fielding schedule (Goerger et al., 2007, p. 5). RFI uses the master fielding schedule to order finished goods, based on anticipated needs, which are then sent to various warehouses (Goerger et al., 2007, p. 5). Inventory is received, packaged and shipped-off to requirement fielding sites as forecasted, where it is individually issued (Carrier, 2007). Some CLII equipment, like boots, are sent to the fielding sites at greater than 100% requirements to account for sizing requirements of the individual Soldier (Carrier, 2007). The RFI concept uses a predictive tariff factoring model to estimate sizing requirements and quantities of the fielding site Soldier recipients (Goerger et al., 2007, p. 29).

Excess organizational clothing materiel is returned to the Lansing, MI, warehouse where they are “checked for quality and re-shelved to support future fielding exercises” (Goerger et al., 2007, p. 24). In the event of a shortage, additional materiel is sent from the warehouse to fill the requirement (Carrier, 2007). According to the Rapid Fielding Initiative Business Case Analysis, if the warehouse is out of stock, the required class II equipment is ordered and “shipped directly to the unit at a later date,” which can sometimes be after the Soldiers have deployed (Goerger et al., 2007, p. 6). Additionally, as evidenced at Bagram Airfield, Afghanistan, in-theater RFI warehouses “provide initial issue and theater-specific items” (Barkley, 2011, para. 2). The Rapid Fielding Initiative Business Case Analysis from June 2007 states, RFI’s primary objective is “to field 100% of Soldiers deploying to theater with 100% of their RFI items 30 days prior to conducting their mission readiness exercise” (Goerger et al., 2007, p. 8). From beginning to end, RFI takes the following steps:

1. Utilize RFI Equipment List – Approved by HQDA G-3/5/7
2. Review Master Fielding Schedule
3. Conduct Strategic Planning
4. Bring-in refurbished OCIE and procure new OCIE, and ship to warehouse
5. Warehouse packages and ships equipment to fielding sites
6. Equipment is fielded
7. Retrieve and Order additional equipment as needed, and send it to the Unit (Mortlock & Super, 2014, slide 3)



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III. LITERATURE REVIEW

A. UNITED STATES ARMY PRE-POSITIONED STOCK (APS)

The USA and USMC both preposition materiel around the globe to streamline and coordinate logistics requirements with effectiveness and efficiency in response to either a military conflict or to support any humanitarian assistance needs. The main goal is to “deliver the [right materiel] at the right place and at the right time” as well as reduce the logistical timeline for delivery of heavy equipment to the warfighter in theater (United States Joint Forces Command, 2006, p. 2). In contrast to OCIE doctrine which states that OCIE is carried as to accompany troops (TAT). With more expeditionary deployments, the deterrence strategy relies more and more on power projection rapidity (DOA, 2015c).

Positioning materiel at the right place improves time significantly and supports the mission as long as the materiel is what is needed. Based on the concept of forward projection of power, prepositioning materiel is the fastest way to respond to an emergent conflict. The APS concept is deployed in five different locations, as shown in Figure 19.

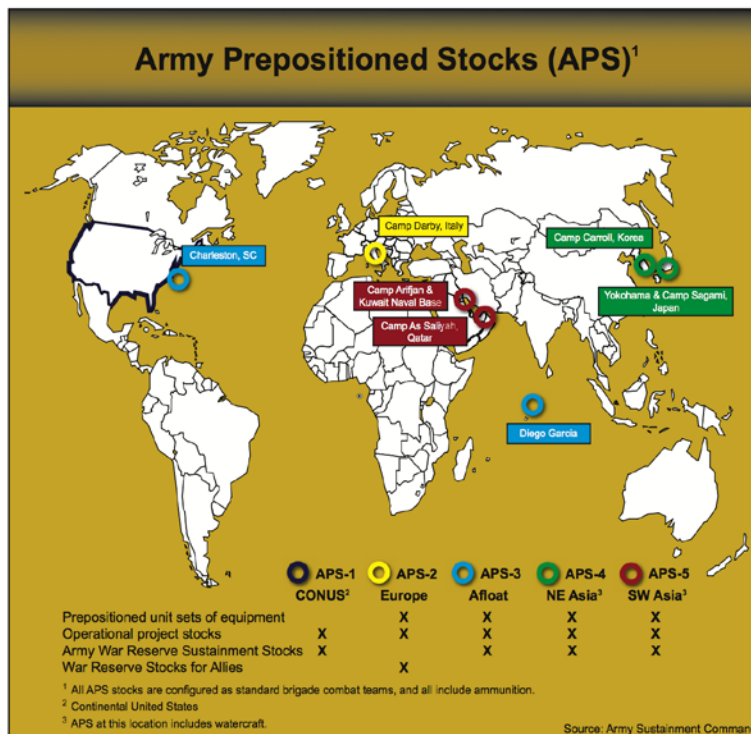


Figure 19. Army Pre-positioned Stock. Source: Association of the USA (2008).

Per ATP 3-35.1, APS encompasses pre-positioned “unit sets of equipment, operational project stocks, Army War Reserve Sustainment [stocks], and War Reserve Stocks for Allies” (DOA, 2015a, p. 2). Army Sustainment Command (ASC) manages this equipment however, the materiel is under the responsibility of the Army Materiel Command (AMC) and Military Sealift Command (MSC) (DOA, 2015a).

The current operational temp overseas and the sequester create issues for APS. ASC has met difficulties rebuilding stocks afloat and modernizing equipment to meet the current demands of the warfighters facing constant changes during conflicts. APS personnel face constant pressure from degrading readiness. The association of the USA stated, “It is not just the age and condition of APS equipment and cumbersome systems at issue. The salient issue is whether APS possesses the right equipment in sufficient number, properly sited and well-maintained” (Association of the USA, 2008, p. 5).

The Automated Battle Book System (ABS) displays what is available at each APS location. Under APS Concept of Operations (CONOPS), it is important to note the concepts of materiel not authorized for pre-positioning (NAP) and to-accompany-troops (TAT) items. NAP and TAT are materiel required to be brought to theater from the home station (e.g., expensive radio communication items). Troops deploying into theater must carry their personal OCIE due to its “cost, availability, sensitivity or unsuitability for storage” and is comparable to the NAP concept (DOA, 2015a, p. 1-4). Examples of TAT and NAP items are listed in Table 4.

Table 4. Examples of TAT and NAP Items. Source: DOA (2015c, Table 1-1).

<i>TAT</i>	<i>NAP</i>
<ul style="list-style-type: none"> • Organizational clothing, such as sized items, and equipment • Protective field masks • Individual weapons • Binoculars • Selected office machines, automated data processing equipment, and administrative items • Selected night vision materiel • Watches • High-cost, low-weight items • Cameras 	<ul style="list-style-type: none"> • Selected missile ground support equipment and selected munitions • Selected highly pilferable items • Items that are an integral part of a system that has another line item number excluded • Items not required because of host nation support • Shelf life items not to be held in long-term storage • Aircraft, aircraft subsystems, and Avionics • Classified items such as communication security equipment • Selected high dollar value communication security equipment



APS is managed by both Army, the Office of the Surgeon General (OTSG), and the support of DLA (see Figure 20).

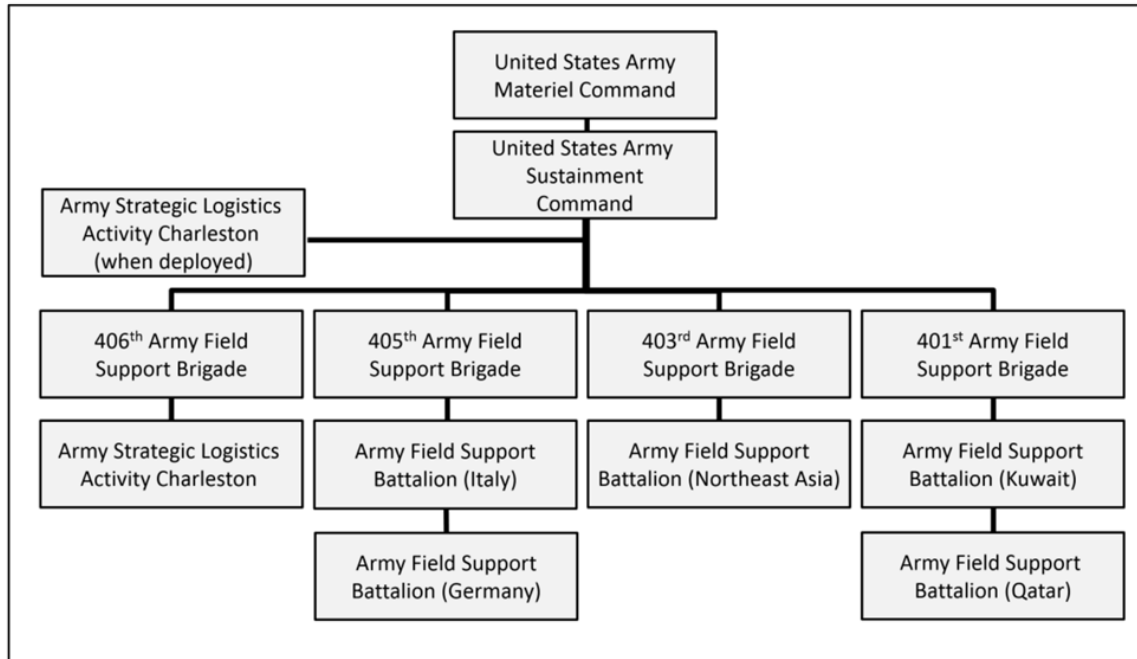


Figure 20. APS Program Organization. Source: DOA (2015c, Figure 2-1).

APS operation functions are comprised of five stages: Planning, Deployment, Employment, Redeployment and Regeneration. When contingencies emerged overseas, the key enabling steps for APS are as follows:

1. Strategic lift: Troops and personal materiel are transported to the aerial port of debarkation (APOD).
2. APOD Troops and personal materiel are consolidated as close as possible near the theater of operations.
3. Seaport of debarkation (SPOD): Pre-positioning ships deliver class VII materiel near the theater of operations.
4. Staging Base: Troops are setting up bases in theater
5. Surface Transportation Infrastructure and Movement Control: Routes and schedules are put in place to allow materiel and additional troops to be transported to forward staging bases.

6. Security: Base are safe and secure within theater
7. Logistics Support: Constant and reliable logistics is provided through warfighters and enablers.

The USMC can also tap into APS to support any contingencies assigned overseas. In addition, they are deployed in Norway with the Norway Air-Landed Marine Expeditionary Brigade (NALMEB) and at sea with the maritime prepositioning force (MPF). These two programs support the Marine Air Ground Task Forces (MAGTFs) and additional forward deployed units. The purpose of these three programs (APS, NALMEB, and MPF) are to support a rapid deployment of forces and to support the United States National Defense Strategy.

As mentioned in the *Prepositioning Program Handbook*, “Operations Desert Shield/Desert Storm (Southwest Asia), Restore Hope (Somalia), and Iraqi Freedom have all benefited from the support of both programs above. Time and strategic lift were conveniently located and immediately available to Combatant Commanders” (USMC, 2009, p. i). Of note, all materiel pre-positioned under APS cognizance does not contain CCE or PPE (see Table 5 and 6).



Table 5. MPF & M CCP-N Equipment and Supplies (1 of 2). Source: USMC (2009).

NOMENCLATURE	TAMCN	MPF	MCCP-N*	TOTAL
COMBAT SYSTEMS				
HMMWV/ECV ARMT CARRIER	D1159	189	63	252
	D0030			
HMMWV/ECV TOW CARRIER	D1125	144	24	168
	D0032			
LW HOWITZER	E0671	90		90
M198 HOWITZER	E0665		18	18
AAV-C7 (RAM/RS)	E0796	27	-	27
AAV-P7 (RAM/RS)	E0846	288	-	288
AAV-R7 (RAM/RS)	E0856	12	-	12
LAV-AT	E0942	12	-	12
LAV-C2	E0946	3	-	3
LAV-25	E0947	42	-	42
LAV-LOG	E0948	9	-	9
LAV-MORTAR	E0949	6	-	6
LAV RECOVERY	E0950	3	-	3
TANK RECOVERY (HERCULES)	E1378	21	-	21
TANK M1A1	E1888	174	-	174
MOBILE COMMUNICATIONS				
RADIO SET, AN/MRC-148	A0067	180	-	180
RADIO SET, AN/MRC-142	A1955	21	-	21
RADIO SET, AN/MRC-145	A1957	195	-	195
RADIO SET, AN/VRC-88D	A2074	184	-	184
RADIO SET, AN/VRC-89D	A2075	30	-	30
RADIO SET, AN/VRC-91D	A2077	60	-	60
RADIO SET, AN/VRC-92D	A2078	30	-	30
RADIO SET, AN/VRC-88A	A2167	400	-	400
RADIO SET, AN/VRC-90	A2169	138	-	138
RADIO SET, AN/TRC-170(V)	A2179	24	-	24
MATERIAL HANDLING EQUIPMENT				
KALMAR	B0392	42	3	45
CRANE 25 TON	B0038	24	8	32
CRANE 7 1/2 TON	B0446	36	12	48
FORK LIFT 10K (EBFL)	B2561	138	46	184
FORK LIFT 5K (LRTF)	B2566	72	24	96
FORK LIFT 10K (TRAM)	B2567	37	37	74
MOBILE ELECTRICAL POWER				
FLOOD LIGHT/ W B0891 GEN	B0640	141	47	188
GENERATOR 3 KW	B0730	318	90	408
GENERATOR 10 KW (STAND ALONE)	B0891	84	28	112
GENERATOR 10 KW (400 HZ)	B0921	9	3	12
GENERATOR 30 KW	B0953	207	69	276
GENERATOR 60 KW (400 HZ)	B1016	15	5	20
GENERATOR 60 KW	B1021	87	29	116
GENERATOR 100KW	B1045	56	20	76
EARTH MOVING EQUIPMENT				
EXCAVATOR, COMBAT (M9 ACE)	B0589	18	-	18
ROAD GRADER	B1082	18	6	24
SCRAPPER	B1922	12	4	16
BULLDOZERS MC1150	B2460	36	12	48
BULLDOZERS D7	B2462	15	6	21
LOADER SCOOP	B2464	15	5	20
BACKHOE LOADER	B2483	21	7	28
MTVR DUMP TRUCK	D1073	45	18	63
COMPRESSED AIR FOAM MOBILE	B0625	6	-	6
FIRE SUPPRESSION SYS, MOBILE	B0626	18	2	20
TRK FIREFIGHTING, AIRCRAFT	D1064	24	8	32
BULK FUEL AND WATER STORAGE/MOVMEMENT ASSETS				
500 GAL FUEL PODS	B0570	168	56	224
TAFDS	B0675	15	5	20
FORWARD AREA WATER SUPPLY	B0676	21	7	28
AMPHIB ASSAULT FUEL SYS (1.2 M GAL)	B0685	14	4	18



Table 6. MPF & MCCP-N Equipment and Supplies (2 of 2). Source: USMC (2009).

NOMENCLATURE	TAMCN	MPF	MCCP-N*	TOTAL
HERS	B1135	18	6	24
SIXCONS (FUEL)	B2085	288	44	332
SIXCONS (WATER)	B2086	501	167	668
TANK 50K GAL (WATER)	B2631	54	18	72
TANK 20K GAL (WATER)	B2632	48	16	64
WATER TANK 3K GAL (WATER)	B2130	217	93	310
TWPS	B2605	60	20	80
970 REFUELER (6K FUEL)	D0215	64	26	90
WATER TRAILER (400 GAL)	D0880	330	87	417
MOTOR TRANSPORT				
MTVR CARGO SHORT BED	D0198	319	147	466
	D0003	506	-	506
	D0004	132	-	132
LVS POWER UNIT (Note 1)	D0209	327	58	385
LOWBOY SEMI-TRLR	D0235	45	15	60
TRAILER CARGO 105	D0860	594	49	643
LVS-MK 14 CONTAINER	D0876	176	35	211
LVS-MK 15 WRECKER	D0877	12	2	14
LVS-MK 16 5TH WHEEL	D0878	45	15	60
LVS-MK 17 TRLR POWERED 20T	D0879	34	-	34
LVS-MK 18 SELF LOADER	D0881	60	20	80
MTVR LONG BED	D1062	53	53	106
	D0005	84	-	84
	D0006	22	-	22
HMMWV-A2/ECV	D1158	375	463	838
	D0022	98	-	98
	D0033	190	-	190
	D0034	756	-	756
TRK AMBUL 4 LITTER/2 LITTER	D1001	87	-	87
	D1002	51	6	57
TRACTOR TRAILER	D1134	13	22	35
	D0013	54	-	54
MTVR WRECKER	D1213	22	22	44
	D0015	44	-	44
NUCLEAR, BIOLOGICAL, CHEMICAL				
LTWT DECON SYSTEM	B1291	147	15	162
APRON PROTECTIVE	C2010	588	415	1,003
M291 DECON KIT (U/I is Box=20 per)	C2075	2,178	-	2,178
DECON SYS	C2083	16,506	2,604	19,110
M256 DEC KIT	C2101	1,080	-	1,080
CHEMICAL OVERBOOTS	C2130	43,533	-	43,533
CHEMICAL GLOVES	C2150	43,533	-	43,533
JLIST NBC SUITS (DESERT)	C2305	14,511	-	14,511
JLIST NBC SUITS (DESERT)	C2306	14,511	-	14,511
JLIST NBC SUITS (WOODLAND)	C2307	29,022	-	29,022
JLIST NBC SUITS (WOODLAND)	C2308	29,022	-	29,022
WATER TEST KIT	C2375	201	153	354
DS2 50# DRUM	K4267	-	384	384
SUPPLIES				
MRES (CASES)	S0030	72,960	10,000	82,960
TENT CMD POST (DESERT/CAMO)	C0044/5	308	231	539
GP TENT SYS, GP MODULAR	C3413	1,200	910	2,110
LIGHTWT MAINT ENCLOSURE (LME)	C6415	426	161	587
LUMBER 1x4 (Board Feet (BF))	J3090	1,408	-	1,408
LUMBER 10x10 (BF)	J3090	1,600	-	1,600
LUMBER 2x4 (BF)	J3090	12,266	-	12,266
LUMBER 2x6 (BF)	J3090	10,480	-	10,480
LUMBER 2x12(BF)	J3090	2,976	-	2,976
LUMBER 3x12 (BF)	J3090	119,874	-	119,874
LUMBER 4x4 (BF)	J3090	16,340	-	16,340
PLYWOOD 3/8" (Sheets)	J3090	100	-	100
PLYWOOD 1/2" (Sheets)	J3090	1,068	-	1,068
PLYWOOD 3/4" (Sheets)	J3090	260	-	260
PLYWOOD 5/8" (Sheets)	J3090	300	-	300



Surface Deployment Distribution Command (SDDC), AMC, and MSC under United States Transportation Command (USTRANSCOM) support the movement and staging of forward materiel. APS, AMC, and MSC are often called the strategic mobility triad.

B. DEPLOYER EQUIPMENT BUNDLE CONCEPT

1. Purpose

The DEB concept includes two primary categories of Soldier OCIE: fire retardant uniforms and upgraded personal protective equipment (PPE) like Soldier Protection System (SPS), which includes a helmet, ballistics vest, hard armor plates, protective eyewear, and integral sensor system. (PM SPIE, 2013).

2. Summary

Per the Army Equipping Guidance 2013 through 2016, Annex B—Terms of Reference, the DEB is an equipping concept in draft form designed to ensure that the latest operational flame retardant (FR) uniforms, clothing and individual equipment are immediately available to field to deploying Soldiers, meeting the capability that PEO Soldier's RFI using Overseas Contingency Operation funds currently provides (DOA, 2013a).

This concept would support a current lack of planning in OCIE and Personal Protective Equipment (PPE) requirements at low cost in case of a sudden major conflict and deployment of troops up to 15 brigades (PM SPIE, 2013). In the DEB cost benefit analysis dated December 5, 2013, Edgewood Chemical Biological Center studied and reviewed the DEB concept in full detail. It operates similarly to RFI, but is funded from the base budget in a non-contingent environment. The goal is to ensure that the latest OCIE is ready to immediately field to deploying Soldiers. It provides decreased operational risks and lessens the chance that the Army (or any other branches of the U.S. Armed Forces) will have to pay a high-price for unplanned and massive rush orders to equip an entire force with the most advanced equipment available and still maintain an inventory in case of further emergent needs when faced with a sudden major conflict (PM SPIE, 2013).



Currently, the Armed Forces Exchange website lists the Army OCP blouse and trouser (non-FR) total cost per set at \$95.51 (Armed Forces Exchange, n.d.). According to PM SPIE in Table 10, the FR ACU blouse and trouser total cost per set is \$175; an increase of 83% over standard OCP uniforms. Due to high price differentials, the Army does not issue FR ACUs prior to a deployment and only issues to deploying warfighters. The DEB concept supports deploying forces in camouflage uniforms, along with OCIE and Personal Protective Equipment (PPE; PM SPIE, 2013).

A goal of the DEB concept is to provide time for the industrial base to ramp up and launch the production of additional items for follow-on deployers and future sustainment (PM SPIE, 2013). Edgewood Chemical Biological Center's cost benefit analysis, dated December 5, 2013, shows concern for major conflicts from the RFI OCO funded environment. It could take up to 12 to 15 months to equip and field 15 brigades and their support team.

The DEB concept recommends that the Army maintain and manage the DEB inventory and provide a loop system to make sure the equipment stored is the best the Warfighter can get (PM SPIE, 2013). Like the RFI system, the DEB stock is modernized as new equipment comes on line and older equipment is issued to the troops in continental United States (CONUS) in accordance with HDQA G-3/5/7 priorities (PM SPIE, 2013). Upon termination of contingency operations, surplus RFI is responsible for replenishment of updated DEB inventory (PM SPIE, 2013). DEB could also support the Global Reaction Force with FR uniforms and modern PPE (PM SPIE, 2013).

The DEB concept received the endorsement of Maneuver Center of Excellence (MCoE; Sando, 2012) and Army Capabilities Integration Center (ARCIC). A detailed storage and sustainment plan is the natural following step for this idea. A solid cost benefit analysis regarding storage solutions was developed in 2013 (Richards et al., 2013).



3. Background

PEO Soldier manages the rapid fielding initiative, a similar concept to DEB. However, RFI exists in a well-funded Oversea Contingency Operations environment and hot industrial base (PM SPIE, 2013).

With a potential cessation of hostilities and RFI funding coming to an end, it is prudent to develop a process to equip first deploying brigades for future deployments post OCO funding (PM SPIE, 2013). One of the key points of the DEB concept is about FR uniforms (PM SPIE, 2013). For instance, infantry personnel in CONUS are not equipped with FR garments and in the case of a sudden deployment requirement, FR uniforms are not issued until well after departure from home duty station. The DEB process would mind the FR gap and provide specific FR uniforms and PPE (PM SPIE, 2013).

HQDA guidance is in full alignment with this concept (PM SPIE, 2013). The DEB concept follows the FY13 Defense Planning Guidance for regional deployment and aligns with the FY12 Soldier Modernization Strategy and the FY15 Army Equipment Modernization Strategy.

The Army Strategic Planning Guidance 2014 is in the same alignment as it states, “The ready capabilities of American military forces allow the United States to respond quickly around the world, providing a presence that advances U.S. national security and contributes to global peace and stability” (DOA, 2014a, p. 1).

The document continues, “If these fiscal constraints remain, resulting in an undersized and less ready Army, it leaves the Congress, future administrations, and the Nation with severely reduced options for military action to prevent, deter or win conflict” (PM SPIE, 2013b, p. 1).

To rapidly field the most up-to-date equipment for a future conflict within a non-contingent environment, including deep budget cuts and possibilities of a dormant and cold industrial base, the Army along with PEO Soldier must acquire, stock, and manage a large and dormant stock of OCIE materiel in support of deployers and enablers (PM SPIE, 2013). The DEB concept intends to answer the future unexpected demand to support this capability (PM SPIE, 2013).



4. How Deployer Equipment Bundle Concept Works

Under the DEB concept, the Army would assign an office of primary responsibility (OPR) to procure, stock, upgrade, and issue DEB OCIE materiel as required (PM SPIE, 2013).

a. Procurement and Stockage

The OPR would work with responsible Army staff agencies to ensure base funding for the DEB concept is included in future Army program objective memorandum (POM) submissions. The DEB concept is funded with Equipping Program Evaluation Group (EE PEG) Operations and Maintenance Army (OMA) funding. DEB will use the RFI storage concept (PM SPIE, 2013). Systems like container inserts, tactical lockers, rack systems, contingency rack systems, or content specific solutions will significantly reduce the concerns about the flexibility and speed required to respond to a contingency and outfit 15 brigades (PM SPIE, 2013). In 2013, Edgewood Chemical Biological Center developed a cost benefit analysis to address advantages and inconveniences to central storage versus regional storage (Richards et al., 2013).

b. Upgrading

The DEB concept will supply the most up-to-date OCIE materiel available. Annually, the OPR will receive an army approved; revised list of Organizational Clothing Individual Equipment (OCIE) items in accordance with G-3/5/7 priorities and submits follow-on requirements to DLA Troop Support office in support of continuous upgrades for materiel in storage (PM SPIE, 2013).

c. Issuance and Outfitting

In support of immediate contingency operations, first deployers and enablers are outfitted with the most technically advanced equipment inventoried in the DEB warehouse under the supervision of the assigned DEB OPR (PM SPIE, 2013). Congress will then activate OCO funding, which will allow replenishment of DEB materiel for future conflicts (PM SPIE, 2013). RFI is then re-activated or ramped-up if necessary and take the relay of the DEB concept in an OCO funding environment (PM SPIE, 2013).



5. Deployer Equipment Bundle Set Composition

The DEB concept provides FR uniforms and PPE accessories on the annually reviewed list, similar to the current RFI list. Outfitting up to 15 brigades or 4,700 warfighters and enablers is the goal and can be used as a planning factor (PM SPIE, 2013). Therefore, an effective clothing size tariff ensures all Soldiers are issued properly sized items to their body composition (PM SPIE, 2013).

As shown in Tables 7, 8, and 9, the draft DEB concept plan dated February 20, 2013, delineates a prescribed list of required items.

Table 7. BCT Set with Transitional plus Arid/Desert Uniforms and Temperate Weather Mount Combat Boots. Source: PM SPIE (2013).

Item	USER	BOI	#Camo Patterns	Size Tariff	Unit Cost	1 BCT Cost	Total Items
Soldier Protection System	All Soldiers	1	1	1.08	\$ 7,531.00	\$ 38,227,356.00	5076
Hot Weather FR Combat Boot	All Soldiers	1	1	1.15	\$ 107.00	\$ 578,335.00	5405
TW Mountain Combat Boots	All Soldiers	1	1	1.15	\$ 95.00	\$ 513,475.00	5405
FREE	All Soldiers	1	1	1.15	\$ 2,300.00	\$ 1,244,300.00	541
FR ACU Trouser	90% Soldiers	3	2	1.15	\$ 90.38	\$ 2,637,921.06	29187
FR ACU Coats	90% Soldiers	2	2	1.15	\$ 84.68	\$ 1,647,703.44	19458
ACS	All Soldiers	4	2	1.15	\$ 105.00	\$ 4,540,200.00	43240
ACP	All Soldiers	2	2	1.15	\$ 200.00	\$ 4,324,000.00	21620
Total:						\$ 53,713,290.50	

Table 8. BCT Set with Transitional plus Woodland/Jungle Uniforms. Source: PM SPIE (2013).

Item	USER	BOI	#Camo Patterns	Unit Cost	1 BCT Cost	Total Items
Soldier Protection System	All Soldiers	1	1	\$7,531.00	\$ 1,573,979.00	209
TW Mountain Combat Boots	All Soldiers	2	1	\$ 95.00	\$ 168,910.00	1778
FREE	All Soldiers	1	1	\$2,300.00	\$ 324,300.00	141
FR ACU Trouser	90% Soldiers	3	3	\$ 90.38	\$ 723,130.38	8001
FR ACU Coats	90% Soldiers	2	3	\$ 84.68	\$ 451,683.12	5334
ACS	All Soldiers	4	3	\$ 105.00	\$ 1,120,035.00	10667
ACP	All Soldiers	2	3	\$ 200.00	\$ 1,066,800.00	5334
Total:					\$ 5,428,837.50	



Table 9. BCT Set with Transitional Uniforms. Source: PM SPIE (2013).

Item	USER	BOI	#Camo Patterns	Size Tariff	Unit Cost	1 BCT Cost
Soldier Protection System	BCT Member	1	1	1.08	\$7,531.00	\$31,435,900.00
PPE DEB TOTAL						
Mountain Combat Boot	BCT Member	2	1	1.15	\$ 95.00	\$ 844,503.00
Cold Weather Clothing System (Gen III)	BCT Member	1	1	1.15	\$1,300.00	\$ 5,778,175.00
FREE	Per Air/Mounted	1	1	1.15	\$2,300.00	\$ 1,620,995.00
Lightweight Performance Hood	BCT Member	0	1	1	\$ 22.00	\$ -
Improved First Aid Kit (IFAK) w/Cbt Gauze	BCT Member	1	1	1	\$ 76.00	\$ 293,740.00
MOLLE Hydration Bladder	BCT Member	1	1	1	\$ 35.00	\$ 135,275.00
MOLLE Rifleman Set	BCT Member	1	1	1	\$ 235.00	\$ 908,275.00
MOLLE Large Ruck	BCT Member	1	1	1	\$ 260.00	\$ 1,004,900.00
Tactical Assault Panel	BCT Member	1	1	1	\$ 55.00	\$ 212,575.00
Medium Ruck	BCT Member	1	1	1	\$ 94.00	\$ 363,310.00
FR ACU Trousers	BCT Member	3	1	1.15	\$ 90.38	\$ 1,205,150.00
FR ACU Coats	BCT Member	2	1	1.15	\$ 84.68	\$ 752,763.00
ACS	BCT Member	4	1	1.15	\$ 105.00	\$ 1,866,795.00
ACP	BCT Member	2	1	1.15	\$ 200.00	\$ 1,777,900.00
Patrol Cap	BCT Member	1	1	1.15	\$ 8.10	\$ 36,002.00
Sun Hat	BCT Member	1	1	1.15	\$ 10.24	\$ 45,514.00
A2CU	per Air	3	1	1.15	\$ 242.35	\$ 293,035.00
iCVC	per Mounted	3	1	1.15	\$ 224.88	\$ 203,562.00
Accessory Kit	BCT Member	1	1	1	\$ 63.49	\$ 245,389.00
Patch Kit	1/5 Soldiers	0	1	1	\$ 13.39	\$ -
Modular M9 Holster	BCT Member	1	1	1	\$ 99.00	\$ 382,635.00
Army Combat Glove	BCT Member	2	1	1.15	\$ 35.00	\$ 311,133.00
MOLLE Grenadier Set	Grenadier	1	1	1	\$ 40.00	\$ 13,360.00
MOLLE Medic Set	Medic	1	1	1	\$ 180.00	\$ 31,788.00
MOLLE Pistolman Set	Pistolman	1	1	1	\$ 21.00	\$ 16,097.00
MOLLE Saw Gunner Set	SAW Gunner	1	1	1	\$ 30.00	\$ 13,500.00
OCIE DEB TOTAL						\$18,356,371.00
DEB TOTAL						\$49,792,269.00
Annual GRF						\$ 37,344,202.00

6. Sustainment

In accordance with the DEB concept plan, theater CIFs would manage and sustain first deployers through a direct exchange operation until CONUS manufactures ramped up to required production levels (PM SPIE, 2013). Planning Figures to support this program are based upon historical data of annual replacement percentages of 20% for uniform items, 10% for PPE (PM SPIE, 2013).

Initial estimates for the cost to support DEB activity is at \$7.3 million annually (PM SPIE, 2013; see Table 10). Additionally, the plan states OCO funding is re-activated upon declared contingency in support of the RFI initiative to replenish DEB warehouse stocks in support of follow-on crisis.



Table 10. DEB Sustainment Costs (Supplemental Funding after DEB Fielding). Source: PM SPIE (2013).

Item	BOI	#Camo Patterns	Unit Cost	#Items in the DEB	Sustainment Quantity	Sustainment Cost
Soldier Protection System	1	1	\$7,531.00	4174	209	\$ 1,571,795.00
Mountain Combat Boots	2	1	\$ 95.00	8890	1778	\$ 168,901.00
FREE	1	1	\$2,300.00	705	141	\$ 324,199.00
FR ACU Trousers	3	3	\$ 90.00	40003	8001	\$ 723,090.00
FR ACU Coats	2	3	\$ 85.00	26669	5334	\$ 451,658.00
ACS	4	3	\$ 105.00	53337	10667	\$ 1,120,077.00
ACP	2	3	\$ 200.00	26669	5334	\$ 1,066,740.00
Totals				160447	31464	\$ 5,426,460.00

7. Application to the Global Response Force (GRF)

The primary mission of the Fort Bragg Global Response Force (GRF) is to deploy 17 hours no notice and extract American civilians from war zones. Additionally, GRF provides support to allies facing natural disasters (PM SPIE, 2013). For instance, a GRF brigade deployed to Haiti in 2010 following the earthquake disaster (PM SPIE, 2013). With the Islamic State of Iraq and Syria (ISIS) threat, GRF is required to be ready at a ready state at a moment's notice (PM SPIE, 2013). Therefore, the DEB concept is directly applicable to GRF operations (PM SPIE, 2013). The DEB concept plan states that a GRF would benefit from the DEB, having immediate access to up-to-date equipment. The Army would support deploying Soldiers through either RFI or DEB, whether OCO funding was available or not (PM SPIE, 2013). Additionally, sustainment must be accounted for to better forecast program lifecycle costs (PM SPIE, 2013).

In addition, every 18 months the next GRF unit must be equipped with the most advanced materiel available within the DEB inventory (PM SPIE, 2013). Continuous replenishment of the DEB storage location will have to be considered with additional support funding (PM SPIE, 2013).

Initial PM SPIE estimates for the costs to support GRF are around \$50 million per an 18-month period (see Table 11). A GRF element is 3,865 warfighters, which is slightly smaller than standard brigade-size element of 4,700 warfighters (PM SPIE, 2013).



Table 11. GRF Projected Annual Costs Based upon an 18-Month Fielding Cycle. Source: PM SPIE (2013).

Item	User	BOI	# Camo Patte	Size tarrif	Unit Cost	1 BCT (Annual)
Soldier Protection System	BCT Member	1	1	1.08	\$ 7,531.00	\$ 31,435,900.00
PPE DEB TOTAL						\$ 31,435,900.00
Mountain Combat Boot	BCT Member	2	1	1.15	\$ 95.00	\$ 844,503.00
Cold Weather Clothing System (Gen III)	BCT Member	1	1	1.15	\$ 1,300.00	\$ 5,778,175.00
FREE	Per Air/Mounted	1	1	1.15	\$ 2,300.00	\$ 1,620,995.00
Light Weight Performance Hood	BCT Member	0	1	1	\$ 22.00	\$ -
Improved First Aid Kit (IFAK) w/Cbt Gauze	BCT Member	1	1	1	\$ 76.00	\$ 293,740.00
MOLLE Hydration Bladder	BCT Member	1	1	1	\$ 35.00	\$ 135,275.00
MOLLE Rifleman Set	BCT Member	1	1	1	\$ 235.00	\$ 908,275.00
MOLLE Larger Ruck	BCT Member	1	1	1	\$ 2.60	\$ 1,004,900.00
Tactical Assault Panel	BCT Member	1	1	1	\$ 55.00	\$ 212,575.00
Medium Ruck	BCT Member	1	1	1	\$ 94.00	\$ 363,310.00
FR ACU Trousers	BCT Member	3	1	1.15	\$ 90.38	\$ 1,205,150.00
FR ACU Coats	BCT Member	2	1	1.15	\$ 84.68	\$ 752,763.00
ACS	BCT Member	4	1	1.15	\$ 105.00	\$ 1,866,795.00
ACP	BCT Member	2	1	1.15	\$ 200.00	\$ 1,777,900.00
Patrol Cap	BCT Member	1	1	1.15	\$ 8.10	\$ 36,002.00
Sun Hat	BCT Member	1	1	1.15	\$ 10.24	\$ 45,514.00
A2CU	Per Air	3	1	1.15	\$ 242.35	\$ 293,035.00
ICVC	Per Mounted	3	1	1.15	\$ 224.88	\$ 203,562.00
Accessory Kit	BCT Member	1	1	1	\$ 63.49	\$ 245,389.00
Patch Kit	1/5 Soldiers	0	1	1	\$ 13.39	\$ -
Modular M9 Holster	BCT Member	1	1	1	\$ 99.00	\$ 382,635.00
Army Combat Glove	BCT Member	2	1	1.15	\$ 35.00	\$ 311,133.00
MOLLE Grenadier Set	Grenadier	1	1	1	\$ 40.00	\$ 13,360.00
MOLLE Medic Set	Medic	1	1	1	\$ 180.00	\$ 31,788.00
MOLLE Pistolman Set	Pistolman	1	1	1	\$ 21.00	\$ 16,097.00
MOLLE SAW Gunner Set	SAW Gunner	1	1	1	\$ 30.00	\$ 13,500.00
OCIE DEB TOTAL						\$ 18,356,371.00
DEB TOTAL						\$ 49,792,271.00

ANNUAL GRF REQUIREMENT \$ 37,344, 202

**Note: Table 11 identifies that GRF projects annual costs based on an 18 month fielding cycle. This includes, an expanded DEB list beyond just FR ACUs and PPE.

8. Path Forward

Upon DEB concept approval, ASA (ALT) will assign an office of primary responsibility (OPR) to design a precise DEB storage solution and fielding process (PM SPIE, 2013). Then, the HQDA G-3/5/7, DOA Military Operations-Capability Integration Division (DAMO-CI) will provide a solution to equip units like GRF when operating in non-combat exercises (PM SPIE, 2013).



9. Summary

The DEB is a Soldier readiness deployment concept that is capable of supporting early deploying brigade combat teams (BCT) outside an OCO funding environment and mending the gap between the current existing RFI program and an environment absent of contingency. According to PM SPIE:

The DEB concept will outfit 15 BCTs and enablers of first deployers to the next major contingency with the most modern, lifesaving equipment available, providing sufficient buffer stock to enable the industrial base to ramp up to full capacity. This concept procures OCIE/PPE for immediate capability needs and will include FR uniforms, along with OCIE. The DEB concept increases flexibility while reducing operational risks and costs to the Army. This concept allows for continuous technology refreshment of stocks in storage and, once activated for fielding, seamlessly integrates with and facilitates transition to the RFI List as supplemental funding becomes available. (PM SPIE, 2013, p. 11)



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IV. DATA ANALYSIS

A. DOTMLPF – DEPLOYER EQUIPMENT BUNDLE

Chapter IV conveys the research and data analysis process. In the first section of chapter IV, we use the DOTmLPF matrix (see Table 12) to qualitatively compare the Deployer Equipment Bundle concept to the Rapid Fielding Initiative, the Army Preposition Stock activity, the United States Marine Corps Individual Clothing & Combat Equipment sustainment activity, and the United States Army Organizational Clothing & Individual Equipment sustainment activity. The intent of the comparative analysis is to derive the similarities and differences between the chosen processes to further identify DEB's internalities and externalities. Additionally, we evaluated the comparative analysis above and injected those conclusions into a strength, weakness, opportunities, and threats DEB assessment. Next, we conducted a quantitative analysis of two separate conditions, the Army with the DEB concept and a legacy low-level RFI status quo. To do this, we define criteria variable capability gaps (DOTmLPF, 2005). When referencing the DEB, we are currently in a low-intensity and/or non-contingent environment with a warm industry base.



Table 12. DOTmLPF Matrix Summary

	RFI (Rapid Field Initiative)	APS (Army Pre-Positioned Stocks)	USMC ICCE (United States Marine Corps – Individual Clothing and Combat Equipment)	OCIE (Organizational Clothing Individual Equipment)	DEB (Deployer Equipment Bundle)
D Doctrine	Responsibility to provide organizational clothing and critical combat equipment to deploying Soldiers. No doctrine available.	Step-by-Step regulative structure for training, exercise, contingencies and retrograde operations.	New concept, like DEB. Issuance of materiel to troops in support of contingency operations. Troops train with same materiel issued during contingency.	Well regulated. Note that specific materiel stored in specific CIF facilities (i.e., cold weather equipment)	DEB stores a specified number of BCTs worth of FR ACUs and SPS components (helmet, vest, plates, eyewear & sensors). RFI stores materiel to support deployment schedules.
O Organization	PEO Soldier managed vertical integration.	Well-structured organization located in CONUS and OCONUS under AMC, TRANSCOM, SDDC, MSC	Like DEB concept, ICCE uses narrow organization hierarchy (3 levels)	Life cycle management organization, which operates in steady state capacity. Uses narrow organization hierarchy (3 levels).	No organization currently managing DEB. Shallow chain of command (Acquisition organization – 4 levels). Contingency operations only.
T Training	Training for new items occurs at the facilitating event.	All training requirements well described under doctrine. Regular training exercises are conducted.	Training requirements are still being refined. No additional training required.	No training provided to deployers on how to use the materiel issued. Long-term training provided to warehouse personnel.	Long-term storage training required. Troops will not train with materiel issued. Same as RFI.
m materiel	Small quantity of materiel stored, but same items as DEB.	APS and DEB have the same purpose in supporting readiness with large materiel quantities issued during contingency.	Like DEB, FR-ACU only issued during contingencies. All the remaining and required OCIE is issued during training. Materiel issued covers multiple pattern.	Materiel not serially tracked and uses algorithm to determine inventory levels. FR-ACU uniforms are not issued. CIF facilities manage the materiel, not OCIE LCMC. OCIE owns the facility.	Annual scheduling dictates DEB materiel issuance during a contingency. Troops don't train with gear issued.
L Leadership	PEO Soldier tasked in 2002 with mission set.	High level of internal and external communication required. The life cycle community supports the program.	Recognize developing stage of the Consolidated Storage Program. Like DEB, the life cycle management community supports the new concept.	Robust program with many lessons learned. DEB is a new program.	Director of Capabilities Development and integration on behalf of the deputy chief of staff and G-3/5/7 task ASA (ALT to assign an OPR).
P Personnel	Same personnel as RFI managing DEB in a non-contingency environment. Mix of civilian and military personnel.	Additional qualified personnel required during surge. Mix of civilian and military personnel.	Like DEB uses a mix of civilian and military personnel.	Like DEB, uses a mix of civilian and military personnel.	Additional personnel required during surge capacity requirements. Mix of civilian and military personnel.
F Facilities	Operates out of Lansing, MI warehouse and multiple fielding sites.	Requires additional fielding facilities when contingency starts. Globally positioned.	Uses multiple facilities.	Decentralized organization.	No additional warehouse required. Centrally located.



1. Rapid Fielding Initiative (RFI)

This section compares and contrasts the Rapid Fielding Initiative to the Deployer Equipment Bundle concept.

Under the doctrine aspect of DOTmLPF, our analysis determines that RFI is tasked to procure, store and ultimately field organizational clothing and critical combat equipment to deploying Soldiers. DEB doctrine takes over the RFI process to procure and store inventory to desired levels as a means of achieving readiness. Our analysis determines when comparing the two concepts, the significant doctrinal difference is in the storage concept. DEB stores a specific number of BCT's quantity of materiel and the RFI stores variable quantities of equipment relative to the projected deployment schedule. A similarity between the two concepts is the quality of materiel and item types. For RFI and the DEB, both contain CCE deemed to be the exact same and are determined during annual review procedures.

Under the organization aspect of DOTmLPF, our analysis determines that PEO Soldier is tasked to manage RFI operations. At this time, there is no specific organization managing the DEB as it is still in concept state.

Under the training aspect of DOTmLPF our analysis determines that for RFI, training occurs internal to the organization. At this time there are no official internal training processes prescribed for the DEB. However, for both the RFI and DEB processes, during fielding events, should there exist a new piece of equipment unfamiliar to the warfighter, on the spot training would take place allowing users to understand the intricacies of that equipment. Additionally, there is an assumption that both processes would implement train the trainer classes with end users on unfamiliar equipment in question.

Under the materiel aspect of DOTmLPF, our analysis determines that when comparing the two concepts, there is no significant materiel differences between RFI and DEB operations. A noteworthy similarity between the two programs is the CCE equipment types chosen.



Under the leadership aspect of DOTmLPPF, our analysis determines that in 2002 the Chief of Staff of the Army tasked PEO Soldier with the RFI mission set (Carrier, 2007). Additionally, in 2012, the Director of Capabilities Development and Integration on behalf of the Deputy Chief of Staff, G-3/5/7 tasked PEO Soldier with managing the DEB concept (Sando, 2012).

Under the personnel aspect of DOTmLPPF, our analysis determines that personnel requirements are identical for both concepts for day-to-day operations. However, the DEB concept operates under surge capacity conditions. This condition necessitates the requirement for additional personnel to manage due to rapid fielding surge capacity requirements.

Under the facilities aspect of DOTmLPPF, our analysis determines that at this time, there is no specific facility housing the DEB as it is still in concept state. However, as mentioned in the leadership paragraph, both processes are designated to operate out of the Lansing, Michigan facility or similar existing Army warehouses.

2. Army Pre-positioned Stocks (APS)

Under the doctrine aspect of DOTmLPPF, our analysis determines that an exhaustive step-by-step regulative structure governs APS operations in comparison to the DEB, which has no doctrine in its present form.

Under the organization aspect of DOTmLPPF, our analysis determines that APS is comprehensively structured with an expansive depth and range to its organization. Army Materiel Command chain-of-command activities include Sustainment Command, Strategy Logistics Activity (when deployed), four support brigades and six Army support battalions. Horizontally, supporting activities include United States Transportation Command, Surface Deployment Distribution Command, and Military Sealift Command. In contrast, the DEB concept has a relatively shallow construct with three chain-of-command levels; HQDA G-4, PEO Soldier, and PM SPIE.

Under the training aspect of DOTmLPPF our analysis determines that a single over-arching regulation dictates all training requirements for APS operations. The training is regularly reviewed using constant process improvement. No overarching



formal training requirement exists for the DEB program, however, if adopted, official training is institutionalized and planned ahead of time.

Under the materiel aspect of DOTmLPP, our analysis determines that both APS and DEB have the same purpose, to deliver pro-active readiness. Additionally, when a sudden contingency occurs, both programs house and deliver large fixed quantities of materiel to the Warfighter fielding sites. Furthermore, one major difference, the root of our thesis, organizational clothing (CL II) is not a component of Army pre-positioned stocks.

Under the leadership aspect of DOTmLPP, our analysis determines that a major requirement, for both APS and DEB, are to have an effective high level of internal and external communication. The major difference lies in the doctrinal relevance of either community which shapes leadership behavior. APS leadership works within the life cycle management community, whereby DEB leadership works within the acquisition community.

Under the personnel aspect of DOTmLPP, our analysis determines that in support of contingency operations, both the APS and DEB utilize qualified personnel. In the event of a contingency and fielding requirement of DEB assets, additional qualified personnel are required to perform mission support.

Under the facilities aspect of DOTmLPP, our analysis determines that APS and DEB both possess facilities with a square footage capacity necessary to perform their primary functions. Additionally, when contingency is declared, both the APS prepositioning ships and the DEB staging warehouse require additional fielding sites. However, a significant difference between APS and DEB is the number of facilities and locations. APS is globally positioned in nine locations. In contrast, DEB materiel is staged in the Lansing, MI warehouse current facilities, but it is still to be determined. Furthermore, APS land-based sights do not require additional facilities to conduct operations whereby the DEB staging warehouse does. Both facilities are subject to the “act of God,” however, APS facilities carry additional vulnerability to antagonist activity.



3. United States Marine Corps Individual Clothing and Combat Equipment (USMC ICCE)

Under the doctrine aspect of DOTmLPPF, our analysis determines that the Marines issue what the Army considers initial issue clothing through the Individual Issue Facilities (IIF) and organizational clothing through Unit Issue Facilities (UIF). One similarity between ICCE and the DEB is the relative newness of each operational concept. In 2011, the USMC created the CSP program and nested the IIFs and UIFs underneath. The DEB program is still in a conceptual state, therefore doctrine is not yet concrete. Another similarity between ICCE and DEB is the issuance of supplemental gear for a contingent operation. For the Marines, an example is fire-retardant clothing. However, for the Army, DEB issue is FR ACUs and SPS component items. A significant difference between the USMC and DEB is that the USMC issues CCE to a Marine who trains on and deploys with that specific CCE. PM SPIE fields DEB equip only after a contingency is declared with the possibility that the Soldier may not be trained on the CCE received from the DEB fielding. Under the DEB concept, there is a potential requirement for units to update SOPs and reflect changes as Soldiers deploy with materiel configurations different from what they train on. However, this is only a minor issue.

Under the organization aspect of DOTmLPPF, our analysis determines that the USMC and DEB both use a narrow hierarchy organization. ICCE uses 4-levels: Marine Corps Logistics Command Group, the Logistics Service Management Center, the Consolidated Storage Program, individual issue facilities and the Unit Issuing UIF. In contrast, the DEB concept uses 3-levels; HQDA G-4, PEO Soldier, and PM SPIE. Summarily, at the lowest level for the USMC, CCE is sent to multiple individually managed IIF/UIF organizations.

Under the training aspect of DOTmLPPF our analysis determines that due to the newness of both programs, training requirements are still being refined. However, the difference between the ICCE program and DEB concept is the training required for long-term inventory management. ICCE personnel receive life-cycle management training to include long-term storage and care requirements. DEB personnel are acquisitions management trained, and due to their high stock turn rate of CCE equipment, may not have a long-term storage training.



Under the materiel aspect of DOTmLPPF, our analysis determines that USMC ICCE and DEB materiel to be similar in type and pattern. Another similarity between ICCE and the DEB is that neither outfitting concept tracks CCE through individual serial numbers. There are two significant differences. First, in a contingent environment, a Marine only receives FR ACU, but the DEB Soldier receives everything all at once. Second, a Marine receives two-types of authorized uniforms.

Under the leadership aspect of DOTmLPPF, our analysis determines both leadership communities are dedicated to their programs. Due to the relative infancy of ICCE operations, USMC leadership is operating in a learning and improvement stage. According to the Marine Corps Logistics Command's Logistics Solutions for the Warfighter, leadership is "currently developing the Consolidated Storage Program (CSP) requirement" (Marine Corps Logistics Command, 2017, para. 1) Similarly, DEB leadership experiences change management with the integration of increased and long-term storage requirements.

Under the personnel aspect of DOTmLPPF, our analysis determines that both ICCE and DEB operations utilize a mix of uniformed service members and civilians. The USMC operates steady-state at all times with a fixed number of personnel. In contrast, the DEB requires additional personnel to conduct surge fielding requirements.

Under the facilities aspect of DOTmLPPF, our analysis determines that the USMC ICCE and DEB programs utilize centrally managed facilities. A significant difference between the two programs is that USMC ICCE utilizes multiple IIF and UIF locations to stage and field CCE. In contrast to ICCE, the DEB utilizes a singular staging warehouse and external facilities to conduct fielding operations.

4. Organizational Clothing Individual Equipment

Under the doctrine aspect of DOTmLPPF, our analysis determines that both the OCIE CMO life cycle management program and the DEB concept are similar in the fact that both contain CCE that is not serially tracked. Significant differences between the two programs are, OCIE CMO life cycle management program utilizes regulations to determine what OCIE (cold weather equipment) types are housed within specific CIF's. The DEB contains cold weather equipment under the auspice that it has the potential of



being utilized in cold weather environments. An additional variance between the two programs is that the OCIE CMO life cycle management operates CIF's that work in a steady state capacity issuing CCE to Soldiers, in comparison to the DEB, which operates and issues CCE to Soldiers only on a contingent surge capacity. Lastly, OCIE LCMC manages CCE utilizing a peak issue methodology algorithm to determine when and how much inventory to replenish (Fan & Lored, 2013). In comparison to the DEB, which orders CCE annually, that order is in direct relation to the forecasted deployers for the upcoming fiscal year.

Under the organization aspect of DOTmLPPF, our analysis determines that both programs run in completely different aspects. OCIE CMO operates its CIF's within the life cycle management community, whereas the DEB operates within the acquisitions community. The hierarchy for OCIE management is the U.S. Army TACOM LCMC (Tank and Automotive Command Life Cycle Management Community), the Central Management Office, and the individual Central Issuing Facilities. In contrast, the DEB concept command structure is 3 levels; HQDA G-4, PEO Soldier, and PM SPIE.

Under the training aspect of DOTmLPPF, our analysis determines that training for both OCIE management and the DEB are internal to their respective programs. However, a slight difference between the two programs is that OCIE training after issuance of new equipment to the warfighter is not provided. In contrast, DEB provides initial training on new equipment immediately upon issue to the warfighter. An additional difference between the two programs is that the OCIE CIF personnel receive life-cycle management training to include long-term storage and care requirements. DEB personnel are acquisitions management trained, and due to their high stock turn rate of CCE equipment, may not have long-term storage training.

Under the materiel aspect of DOTmLPPF, our analysis determines that a similarity between the two programs is that neither the OCIE LCMC process nor the DEB process track CCE via individual serialized numbering. Additionally, both programs refurbish and recirculate serviceable CCE turned back into their respective programs as a measure of cost savings. There are two significant variances between the two programs. First, the OCIE LCMC does not issue FR ACU uniforms to Soldiers, whereas RFI does. Second,



OCIE LCMC owns OCIE CCE. However, installation-owned CIF's and its personnel house and manage this equipment. In contrast, DEB is owned and managed entirely through PEO Soldier. However, a minute similarity between the DEB and OCIE are that the DEB, like OCIE, are both issued within installation-owned facilities.

Under the leadership aspect of DOTmLPPF, our analysis determines there is little similarity between the two programs except Army leaders command both organizations. In 2006, the OCIE LCMC implemented its current program. Over the past eleven years, OCIE LCMC has had the opportunity to conduct process refinement through lessons learned. In contrast, the DEB concept, if enacted, is an entirely new program from which leaders have only their past experiences from other programs which to draw lessons learned.

Under the personnel aspect of DOTmLPPF, our analysis determines that both OCIE CMO and DEB operations utilize a mix of uniformed service members and civilians. The OCIE CMO operates steady-state at all times with a fixed number of dedicated civilian personnel and only one military member. In contrast, the DEB requires additional personnel to conduct surge fielding requirements.

Under the facilities aspect of DOTmLPPF, our analysis determines that the OCIE CMO and DEB utilize appropriate sizing facilities to conduct operations. A significant difference between the two programs is that the OCIE CMO utilizes decentralized facilities. For example, there are CIF's on every major Army installation. In contrast to the OCIE CMO, the DEB utilizes a singular staging warehouse and external facility sites to conduct fielding operations.

B. DEPLOYER EQUIPMENT BUNDLE SWOT ANALYSIS

From the DOTmLPPF analysis, we identified a number of strengths, weaknesses, opportunities and threats assigned to DEB see Table 13. The intent of this section is to flush out criteria necessary to conduct a quantitative analysis.



Table 13. SWOT Matrix for DEB Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> - Annual Validation - Non-Contingency Readiness - Reduced Learning Curves - Centrally Located Optimal CCE - Component Servicing Capability - Singular Management 	<ul style="list-style-type: none"> - Forward Staging - Training
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> - Leverage Lessons Learned - Executive Priorities - Configuration Scalability - Hub and Spoke Logistics - Incremental Force Modernization 	<ul style="list-style-type: none"> - Managerial Oversight - Funding and Appropriation - Changing Executive Priorities - RFI Continuation - Modernization

1. Strengths

Annual Validation: Through annual review, CCE currently in the DEB program is validated for warfighter needs. If the materiel is no longer required for DEB warehouse storage, the materiel is removed from the Lansing, MI warehouse and fielded to end-users as required. If validated for inclusion in the DEB, materiel is compared against the commercial industry off the shelf items to ensure the best available equipment is procured and included in the DEB. Additionally, materiel in the RDT&E process is reviewed for maturity and potential inclusion in the DEB (Richards et al., 2013, p. 59).

Non-contingency Readiness: The ultimate goal of DEB when a large-scale contingency is declared, is to create readiness in a non-contingent environment through acquisition and staging the best CCE available for a specific number of BCTs. Additionally, DEB ensures a warm industrial base, reducing ramp-up time for acquisition and fielding activities. DEB also uses fiscal resources to bridge the gap between base-line and war-time fielding requirements. As a planning factor, Richards et al. state for example, “Contingency scenarios dictate up to 15 BCT’s having DEB capability and



deploying within 60-days (11 in 30 days, and an additional (4) in 60 days) after notice to execute” (Richards et al., 2013, p. 59).

Reduced Learning Curves: The seamless transition from status quo RFI to DEB operations would rapidly reduce the learning curve for existing employees. The similarities between the programs create an inherent strength due to the ease of implementation and executability. The primary change environment from RFI to DEB is the source of funding.

Centrally Located Optimal CCE: All CCE requirements and fire retardant uniforms are centrally staged in one single location for efficiency. Installation CIF’s in close proximity to the Soldier only have non-FR ACUs, which may not be the necessary materiel for deployment, which disqualifies the advantage of a CIF’s proximity on base.

Component Servicing Capability: CIF’s only provide service to their Installation’s Commands. The DEB services all Army components: active, guard, and reserves, regardless to location or component. Therefore, the deployer expeditiously receives everything they need and are fully-equipped for the mission.

Singular Management: A logistical drawback to status quo OCIE operations is that installation owned CIF’s manage CMO LCMC owned equipment. One single organization owns and manages DEB OCIE. This single ownership streamlines administrative and operational requirements.

2. Weaknesses

Forward Staging: To be effective, the DEB requires significant resources to conduct staging and fielding operations. The DEB operates exclusively from a CONUS logistical footprint. Soldiers must receive all CCE and PPE prior to deploying otherwise, Soldiers deploy to a potentially immature logistical battlespace with the CCE and PPE the currently possess.

Training: On occasion, Soldiers have not previously trained on CCE and PPE received during fielding events. This new equipment poses an operational risk to Soldiers due to the injection of unfamiliar items that are not customized or configured to the units SOPs. Albeit a weakness, it has minimal impact. Unit SOPs are living



breathing documents. Once the equipment is received, units have the ability to adjust existing SOPs and briefly familiarize their Soldiers with the DEB equipment prior to entering a battlespace.

3. Opportunities

Leverage Lessons Learned: When tasked and funded, the Acquisition Community will seamlessly incorporate DEB concept procedures into baseline RFI functions performed. Since 2003, PEO Soldier has fielded CCE to over one million Soldiers (Richards et al., 2013, p.3). There is an immense opportunity to leverage lessons learned from legacy RFI operations when establishing guidelines to DEB standard operating procedures. Additionally, PM SPIE has the opportunity to gain knowledge and leverage lessons learned from the Life-Cycle Management community. For example, CMO/OCIE and ICCE operations all have a high volume long-term storage aspect. Reviewing lessons learned, DEB stakeholders may capitalize on improved efficiencies in storage, inventory and fielding operations. .

Executive Priorities: In February 2017, President Trump submitted a National Security Presidential Memorandum (NSPM-1), which states, “the Secretary shall assess readiness conditions...modernization...and...improve readiness conditions” (DOA, 2016, p. 1). Additionally, CSA General Milley’s states on 1 September 2015:

We must ensure the Army remains ready as the world’s premier combat force. Readiness for ground combat is-and will remain the Army’s #1 priority. We will always be ready to fight today, and we will always prepare to fight tomorrow. Our most valued asset, indeed, the nation’s most valued asset, are our Soldiers and our solemn commitment must always be to never send them into harm’s way untrained, poorly led, undermanned, or with less than the best equipment we can provide. Readiness is #1, and there is no other #1. (Milley, 2015, para. 4)

Both statements are from the highest levels of executive authority and clearly show that readiness is currently a priority. If for no other reason other than the aforementioned, there exists an enormous opportunity for DEB implementation.

Configuration Scalability: If quantity of equipment becomes an issue, the amount of CCE stored for DEB readiness is scalable to senior leadership requirements. If the office of the United States Army chief of staff (G8) feels the quantity of equipment



exceeds funding capacity desired, there exists an opportunity to scale down the DEB inventory to supportable levels.

Hub and Spoke Logistics: DEB centrally stages CCE in a single location and distributes to necessary deployer fielding locations as required. The warehouse in Lansing, MI, may not be the optimal location for hub and spoke logistics due to its location. To minimize transit times, reducing the distance between the warehouse hub and fielding site spokes is vital. Through relocation of the distribution warehouse hub, an opportunity to reduce the lag time to fielding events would exist.

Incremental Force Modernization: As DEB modernizes CCE components for staging, phased-out equipment may be removed from the warehouse and fielded to operational Army units. Life cycle command planners can then create a phased-out fielding schedule, based on individual unit requirements, once the DEB is implemented. This provides an opportunity for the incremental modernization of a unit's legacy items.

4. Threats

Managerial Oversight: Managerial Oversight is a concern. Highlighting the appropriate community to manage the DEB is vital. In the planned format, PEO Soldier, an Acquisition community organization, is tasked to perform DEB operations. The concern is that the Life Cycle community manages long-term storage and non-contingent OCIE fielding processes. The Life Cycle Community may be concerned that another community is performing their function. This could easily be perceived as an inability of the Life Cycle Command to do their job. Higher Army Leadership may not like other Agencies assuming their duties and responsibilities. Community stovepipe mentalities to maintain legacy programs under current doctrine is a threat.

Funding and Appropriation: Administration priorities and the willingness to fund programs have a direct relationship. Programs live and die through executive support or the lack thereof. The readiness DEB buys may become less desirable to another Administration's priorities. Therefore, a priority today may not be a priority for tomorrow.



G8’s mission of managing finite fiscal resources on prioritized requirements and willingness to spend is a threat tied directly to the DEB.

RFI Continuation: If Contingency operations persist, RFI continues at elevated intensity. In this state, non-contingent readiness is made irrelevant. Therefore, the DEB does not create readiness and is unnecessary.

C. COMPARATIVE QUANTITATIVE ANALYSES

In this section, we quantitatively compare two non-contingent states. The first state is a condition of low-intensity RFI with the deployer equipment bundle, labeled “DEB.” The second state, labeled “status quo,” reflects a low-intensity RFI, CIF fielding operations, and no DEB. To do this, we first identify evaluation variable criteria for assessment derived from elements of the SWOT assessment. Evaluation criteria are chosen based on importance and their ability to discriminate one state against the other (see Table 14).

Second, we create performance scores for the evaluation factors where (1) represents the higher performance level and (2) represents the lower performance level (see Table 15). It is important to note that for comparative analysis, lower scores are more desirable.

Table 14. Evaluation Factors, Definitions, and Performance.
Source: Richards et al. (2013, p. 14).

Evaluation Factor	Factor Definition	Performance Score
First Deployer Combat Readiness	Upon declaration of contingency First Deployers are equipped with the necessary FR ACU and SPS materiel	1 - First Deployers have the required FR ACU and SPS components when they deploy 2 - First Deployers do not have the required FR ACU and SPS components when they deploy
Cost & Funding	End-State differences by total costs, to include production, staging & fielding, and sustainment activities	1 - Total Life Cycle costs are less 2 - Total Life Cycle costs are greater
Industrial Base	Upon declaration of contingency, time required for Industry to meet production capacity capable of fielding 3 BCT's per month	1 - Less time required to ramp-up 2 - Greater time required to ramp-up
Management & Executability	Stakeholder complexity of management communication due to organizational structure; operations efficiency through process functions, bottlenecks, and lag times	1 - Less complexity and variability 2 - Greater complexity and variability
Aversion to Change	The willingness to accept new programs	1 - Less resistance to change 2 - Greater resistance to change



When then applying performance scores to each evaluation factor for the DEB and Status Quo, we determine that first deployer combat readiness receives a score of (1) for the DEB and (2) for status quo. For cost & funding, we determine that the DEB state receives a score of (1) and the status quo receives a score of (2). For industrial base, we determine that the DEB state receives a score of (1) and the status quo receives a score of (2). For management & executability, we determine that the status quo state receives a score of one (1) and the DEB receives a score of (2). For aversion to change, we determine that the status quo receives a score of (1) and the DEB receives a score of (2).

Third, we applied weighting to the observed evaluation factors with the intent of highlighting the relative importance of first deployer combat readiness over the other relevant factor criteria. The assigned weights are a subjective assessment of the author’s perspectives (see Figure 21).

Table 15. Evaluation Factor Weights and Assessment

Evaluation Factor	Weight	Assessment
First Deployer Combat Readiness	2	The absolute most important factor is the readiness of modernized FR ACUs and SPS items being immediately available to first deployers. As the CSA's number one priority, this factor is weighted twice as important as the rest. We weighted the remaining four evaluation factors the exact same due to their distinctive nature and discernable differences. However, when weighted against the first deployer combat readiness factor, their level of relative importance is not as high a priority as combat readiness.
Cost & Funding	1	
Industrial Base	1	
Management & Executability	1	
Aversion to Change	1	

Next, we sum the observed performance scores as a method of obtaining the raw unweighted score for a baseline comparative analysis. The raw score formula is as such:

$$\text{Factor (F)}_1 + F_2 + F_3 + F_4 + F_5 = \text{Raw Score.}$$

Finally, we multiply the observed performance scores against the relative weight of importance for each evaluation factor to determine overall weighted score. The weighted score formula is as such:



$$F1 * \text{Weight of Importance (WOI)}_1 + F2 * \text{WOI}_2 + F3 * \text{WOI}_3 + F4 * \text{WOI}_4 + F5 * \text{WOI}_5 = \text{Weighted Score}$$

For a comparative sensitivity analysis, we conducted a raw score unweighted baseline assessment to determine the unweighted score for each state based off the metrics described in the raw score and weighted score formula. The sensitivity analysis illustrates a score where DEB operations produces an unweighted score of (7) and the status quo produces an unweighted score of (8). From an unweighted perspective, the DEB scores the lower value of the two states on the sensitivity in analysis Figure 21.

		Evaluation Factors						
		First Deployer Combat Readiness	Cost & Funding	Industrial Base	Management	Aversion & Executability	Raw Score	Unweighted Score
State	DEB Operations	1	1	1	2	2	7	7.0
	Status Quo (no-DEB)	2	2	2	1	1	8	8.0
	Weight of Importance	1	1	1	1	1		

Figure 21. Comparative Sensitivity Analysis of Unweighted Evaluation Factors

Next, we applied the prescribed weighing criteria referenced in Figure 22, to the sensitivity analysis as a method of determining the effect of placing weights on the overall score. The sensitivity analysis illustrates a score highlighting that DEB operations produces a weighted score of (8) and the status quo produces a weighted score of (10). From a weighted perspective, the DEB again scores the lower value of the two states on the sensitivity analysis in Figure 22. We observe that once the weight of importance is applied, the margin between the two states grows two points wider.



		Evaluation Factors						
		First Deployer Combat Readiness	Cost & Funding	Industrial Base	Management & Executability	Aversion to Change	Raw Score	Weighted Score
State	DEB Operations	1	1	1	2	2	7	8.0
	Status Quo (no-DEB)	2	2	2	1	1	8	10.0
	Weight of Importance	2	1	1	1	1		

Figure 22. Comparative Sensitivity Analysis of Weighted Evaluation Factors

Finally, we adjust the weighing criteria to the sensitivity analysis as a method of determining what it would take to change the outcome of the sensitivity analysis so that status quo receives a lower more desirable value. In order to produce a lower value, we change the first deployer combat readiness from a (1) to a (2). We then change both management & executability and aversion to change from a one (1) to a (2). We determine that both cost & funding and the industrial base would remain unchanged. According to Richards et al. 2013 CBA, the DEB is cheaper than status quo. Therefore, the weight of importance for cost & funding remains unchanged. Additionally, we understand that the DEB provides a warmer industrial base than the status quo due to the production requirements it places on commercial industry. Therefore, the weight of importance for industrial base remains unchanged.

For status quo to receive a lower score than the DEB, the weights of management & executability and aversion to change are increased to (2) and the relative weight of first deployer combat readiness is reduced to (1). By changing the relative importance of the weighting factors, the sensitivity analysis produces a score where DEB operations receives a weighted score of (11) and the status quo receives a weighted score of (10). From a weighted perspective, the status quo scores the lower value of the two states of the sensitivity analysis in Figure 23.



State	Evaluation Factors						
	First Deployer Combat Readiness	Cost & Funding	Industrial Base	Management & Executability	Aversion to Change	Raw Score	Weighted Score
DEB Operations	1	1	1	2	2	7	11.0
Status Quo (no-DEB)	2	2	2	1	1	8	10.0
Weight of Importance	1	1	1	2	2		

Figure 23. Alternate Comparative Sensitivity Analysis of Weighted Evaluation Factors

Until now, subjective observations have been applied; in Chapter V we will interpret the differences from the analysis to draw conclusions to identify challenges and barriers of acceptance to the DEB.



V. SUMMARY, CONCLUSIONS, AND FUTURE RESEARCH

A. SUMMARY

The DEB is a storage and outfitting concept and designed to provide First Deployer readiness with the most up-to-date CCE upon declaration of the next major contingency. DEB stores a specified number of BCTs of CCE in a non-contingent environment. Furthermore, DEB allows the industrial base to ramp-up production in an expedited manner which translates into sustained procurement and fielding readiness for follow-on Force deployments. As the world exists currently, the only Army OMA-funded baseline program that provides the most modern CCE for first deployers in a non-contingent environment is the program that supports the GRF. The limitation with this program is that it does not meet the capability gap to rapidly field more than one BCT. The proactive readiness DEB has the ability to create remains unachieved. This project set out to understand why. To answer the primary research question of identifying the challenges and barriers to acceptance of the DEB, we researched OCIE, ICCE, APS and RFI operations to gain insight from similar processes. We found the following challenges and barriers to acceptance of the DEB:

- Ignorance to a new concept
- Aversion to change:
- Culture
- Trust

When new concepts are introduced into an organization, buy-in is necessary for the concept to be received and accepted. When members of an organization do not understand the principles of the new concept due to simple ignorance or the intricacies of its structure, the willingness to accept the concept degrade.

Aversion to change is a naturally occurring behavior in humanity. This aversion is magnified within type-A organizations whose policies and practices were refined and established over generations. Often in those type-A organizations, the phrase “if it is not broken, do not fix it” is voiced. Change generates a certain amount of undesirable friction and uncertainty.



Army culture is strong and diverse. The lifecycle management and acquisition communities each have their own cultures and traditionally, are vastly different from one another. The DEB requires a specific measure of readiness that may be not be acknowledged by necessary stakeholders. DEB success requires comprehensive external stakeholder support. The potential for a clash of cultures within external stakeholder communities is high, especially when each stakeholder has differing priorities.

In horizontal networks, stakeholders operate with independent objectives contributing to the same end goal. When separate communities have differing priorities, those priorities often are not aligned with one another and clash. When readiness is the priority, trusting independent stakeholders to behave in mutually supporting ways is paramount to achieving that goal.

Then, we performed DOTmLPPF, SWOT, quantitative and qualitative analyses to determine if answers existed to the following secondary research questions:

1. What is the Army's legacy operation for the procurement, storage and issuing of OCIE materiel? What is the Army's desired CCE readiness level?

PEO Soldier has an acquisition objective (AO) or procurement objective (PO) for each program. After the AO and/or PO is met, the program transfers from the PM/Acquisition community to the Life Cycle Manager (or Sustainment command) to buy more items and conduct life-cycle management operations, including storage and issuing activities at/from the CIF.

To address the Army's desired level of readiness, the 45th President of the United States calls for improved readiness. The CSA of the Army's number one priority is readiness. Therefore, the desired level sought is relatively higher than present levels. Implementing the DEB concept is one way the Army can improve readiness. The DEB offers a proactive readiness capability to first deployers through its staging of large quantities of FR uniforms (both ACUs and extreme cold weather clothing system [ECWCS]) and PPE items. This type of readiness does not presently exist beyond GRF capabilities.



2. Using comparative analysis, what is the USMC organizational clothing equivalencies operation? Why does the Army pre-position heavy equipment and not FR ACU and CCE items?

Our research determines similarities and differences of the DEB concept to both the USMC's ICCE operation and the Army's APS operation. The USMC utilizes a centralized logistics management concept for ICCE operations. This construct of total life-cycle management is nearly identical to the Army's life-cycle management operations. The USMC outfits the total force at time of initial issue (except FR uniforms). If the Army designated a scalable amount of additional dedicated first deployer BCTs, they could leverage a concept similar to the USMC fielding operations. To do this, DEB would require programmed baseline budget funding, similar to the USMC. Per ATP 3-35.1, Army Pre-Positioned Operations regulation, FR uniforms and CCE items are not pre-positioned due to excessive cost, constrained availability, and a pilferable nature (DOA, 2015, p. 1-4). APS Operations does not provide DEB the ability to leverage best practices due to the dissimilarity of programs.

3. What are the advantages and disadvantages of the DEB concept? How does the DEB affect Commercial Industry's ability to ramp-up to full-rate production?

The greatest advantage of the DEB concept is that it fills a capability gap for CCE materiel readiness in a non-contingent environment. DEB keeps the industrial base warm, significantly decreasing the amount of time required for the commercial industry to reach full-capacity production upon declaration of a major contingency. The greatest disadvantage of the DEB concept is that it is only needed for a non-contingent environment. If, however, the United States fails to transition to a non-contingent state, a sustained RFI operation will supersede a DEB concept requirement. If contingency operations continue, OCO funding would continue to provide resources for the RFI to procure, manage, and field FR uniforms and PPE materiel that the DEB would otherwise stage. In a contingent OCO-funded operational environment, OMA baseline funding will not be used for DEB, thus deeming it irrelevant. Therefore, the willingness to pay for an unneeded capability is not-existent.



To address DEB's effect on Industry's ability to ramp-up, we reviewed the rate at which Industry is capable of reaching full-production capacity, a rate of 3 BCTs per month, in both DEB and status quo environments. In a DEB state, Industry is capable of ramping-up 90 days faster than in a status quo alternative. Our research determines that the DEB concept is optimal when the commercial industry is not producing large quantities of CCE materiel. Additionally, the DEB concept allows up to 21 BCTs the ability to deploy with the most modern CCE within nine (9) months after declaration of contingency, compared to 17 months in an environment without the DEB, FR uniforms and a warm sustaining base (PM SPIE, 2013).

B. CONCLUSIONS

Based on the two evaluation factors where status quo outscores DEB operations, we determine the DEB's greatest challenges and barriers to acceptance to be aversion to change, ignorance to new concept, culture, and trust. Human nature generally has an aversion to change. Until change is understood and embraced, stakeholders will fail to recognize the value of new information. Change in the Army requires shifting away from legacy programs and embracing new paradigms of thought. The DEB concept is a fundamental change in the way Army conducts OCIE management on a large scale. Currently, the GRF brigade conducts a scaled down version of the DEB concept displaying that the DEB concept already works on a smaller scale. Embracing large-scale change adopted from small scale operations requires buy-in of new concepts, trust, time, and program discipline. Additionally, the Army could use the USMC ICE concept for operations as medium-sized DEB concept for storing and staging first deployer FR uniforms and PPE.

Horizontal network relationship of key stakeholders all have varying cultures. When different cultures converge, trust become an issue. Specifically relating to the Army, stakeholders of separate communities have differing priorities, objectives and definitions of how readiness is achieved. Significance to one community may be insignificant to another. Until divergent thoughts from the various communities that handle OCIE co-mingle, cultural and trust issues may persist.



Logistics is not an issue. Army already has the tangible capacity to seamlessly integrate storage, monetary, and transportation requirements. The challenge of changing hearts and minds is the crux of the issue. If stakeholder goals are aligned and mutually endorsed to bring together disparate communities, DEB would create a unique opportunity to provide readiness for the Army's most important resource, the individual warfighter.

C. FUTURE RESEARCH AREAS

Due to the scope and limitations of our research, we recommend the following topic and sub-topics for future research and analysis. The life cycle management community traditionally manages organizational clothing and individual equipment. We feel that there is potential to eliminate stated challenges and barriers to acceptance through placement of the DEB concept within the LCMC community. Specific areas of interest should include: If the LCMC community managed the DEB, how would readiness and life-cycle costs be affected? What are the tangible and intangible costs associated with this change in management? Lastly, what insights are gleaned from converting DEB operations ownership from the vertically integrated PEO Soldier organization to a horizontal network of life cycle management organizations?

Additionally, we feel that there exists an opportunity to leverage the scalability of the DEB inventory potentially reducing other challenges or barriers to acceptance due to stakeholder sensitivity. Specific areas of interest should include: The DEB currently specifies a quantity of support for a specified number of BCTs to support two regional conflicts. Is that number of BCTs the optimal number or should it be a different quantity? Specifically, what is the appropriate quantity of equipment necessary to support DEB operations?

Lastly, the USMC currently issues required ICE to their warfighters immediately upon arrival to individual installations and FR uniforms right before deployment. Specific areas of interest should include: whether there exists an opportunity for the USMC to adopt a DEB concept or is the size of their force too small to warrant implementing such a program?



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